

# A M A T E U R R A D I O

MAY 1963



Vol. 31, No. 5



2/-

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# "AMATEUR RADIO"

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## OUR COVER

Good equipment is a pre-requisite. The cover photograph shows one corner of the Publications Committee tent wherein the Collins 75S-3 is being put to good use by the operator (VK3OM) in the 1963 N.F.D. Contest. Another scene from the contest appears on page 16, which shows further gear being used.

## FEDERAL COMMENT



### P. R. I. N. T.

No one will deny that many amazing advances in communication techniques have been made in recent years, but most have not touched on that important commodity—band space. Single sideband transmissions by both Amateurs and Commercial stations will undoubtedly contribute to the conservation of frequencies, but even this type of emission has only touched on the fundamental problem. What is needed is a break-through in the conveying of intelligence from one place to another.

Is this a pipe dream or not? It might have been considered so, until just recently when a completely new concept was discovered and is believed to be in use for certain applications. This system still uses the electromagnetic spectrum but not in the manner we are in the habit of expecting. In fact, this system contemplates the reception of what we might term intelligent noise! To the normal communication receiver, this system appears to be only randomly scattered noise, and for that reason we have christened it P.R.I.N.T. or Pseudo Random Intelligent Noise Transmission.

To understand this new technique one must dissociate one's thinking in terms of frequencies and start thinking in terms of time. If one can imagine being able to see at the same time a wide portion of the electromagnetic spectrum as on a spectrum analyser, the transmission would appear to be a number of apparently randomly dispersed pulses of noise and would sound like it.

The system is not one that can really be simply described, but suffice it to say that a knowledge of information theory is essential. It does, however, use normal conventional transmitting components, and a system of modulation that can be allied to pulse code modulation. The major ingredients of the system are a "clock oscillator," a black box that produces a series of predetermined pulse codes, a fast acting electronic phase reversal switch and a means of modulating the system by injection at the oscillator. P.R.I.N.T. therefore uses an unusual type of modulation and a new concept in tuning—time instead of frequency. To receive intelligence from the transmission, the receiver "oscillator" must start at the same time as the transmission, must be in phase with it and "detect" the same pulse code system.

Due to these variables, many such systems using different codes and time starting points may be accommodated in the same spectrum space. As this system is still in its infancy, there are no "do-it-yourself" kits on the market; nevertheless, it does present a brighter picture for the future accommodation of many more stations and their operation without mutual interference. This system will offer a challenge to the serious experimenter for some years until we are able to apply p.s.i. communication on an on-off basis—did someone ask what p.s.i. communication is—well we are not telling now but reserving it for a future editorial!

FEDERAL EXECUTIVE, W.I.A.

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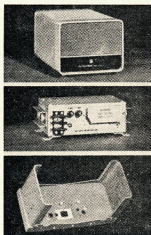
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**P-150 D.C.** (centre left): Five silicon diode rectifiers, four transistors. Weighs only 5½ lbs. Size: 3½" x 10" x 6½".

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# A LINEAR AMPLIFIER FOR 50 Mc.

I. F. BERWICK,\* VK3ALZ

THE availability of the QQE06/40 on the surplus market solved a problem for the writer—viz, a suitable tube for a QRO 50 Mc. linear. The QQE06/40 has rather attractive ratings in linear service, is efficient to 300 Mc., and has a reputation for linearity.

I decided to use a pair in push-pull parallel in order to have a conservative 150 watt linear. The results so far have been satisfactory.

It will be noted that a t.v.i. trap is fitted at the antenna terminal. An AB2 linear has a percentage of harmonic distortion which, though small, results in an appreciable amount of harmonic power being generated when the p.e.p. input is several hundred watts.

Other than this, no t.v.i. precautions need ordinarily be taken.

All information relevant to the construction is given on the schematic.

Reference to the schematic shows that link neutralisation is used. In fact this is not neutralisation but negative feedback. There is a subtle difference.

The negative feedback r.f. amplifier is used extensively commercially in linear service. In my case it was the most convenient mechanically.

The bias is given as -28 v.d.c. Actually this should be capable of some

variation to suit individual requirements. Some may prefer to run the amplifier more into AB1 or more into AB2. AB2 gives more output but the drive requirements are more stringent and harmonic distortion slightly greater. The bias supply should be completely free from ripple and of low impedance if AB2 operation is contemplated.

A small amount of grid swamping is used. The main load on the driver however is a 100 ohm resistor across the transmission line between driver and amplifier.

## ADJUSTMENT

Grid-dip the grid and plate tanks. Apply drive and bias and peak the grid tuning. Reduce drive to a safe level, connect a load, apply screen and plate volts, tune plate to resonance, then to i.f. side of resonance. If t.p.t.g. oscillation occurs adjust position of neutralising coils until oscillation ceases. Use no more negative feedback than is necessary to ensure stable operation.

No trace of parasites should be encountered if the suppressors, as described in the schematic, are fitted.

## LINEARITY CHECKS

One should not imagine that the linear can be put on the air without

proper linearity checks. As pointed out in my previous article, there are several types of oscilloscope display which can be used for linearity checks. It is not the purpose of the article to discuss these, which in any case are adequately covered in A.R.R.L. S.B. Handbook and other publications.

There should therefore be no great difficulty in satisfactorily completing the linearity checks provided (a) one has the necessary test equipment, and (b) the Handbook procedure is followed. As a matter of interest the writer is equipped to make on-the-air linearity checks provided a signal 20 db. above the noise can be supplied.

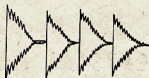
There is a vast difference in performance between a correctly adjusted linear and a maladjusted one, and this difference is reflected in the readability of the received signal.

**Please Note:** Calibrated screw-driver techniques are inapplicable in this application.

## C.R.O. PATTERNS

I conclude with some pretty pictures taken from the c.r.o. face, plus appropriate (I hope) comment.

### Voice Waveforms—Envelope Display 30 c.p.s. Sweep Speed Vowel Sound



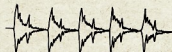
Cool Man, Cool!

Peaks sharp and clean, correct triangular pattern, freedom from harmonics of voice frequencies. Signal normally copyable down to S3.



Plenty of Sidebands here—too many in fact!

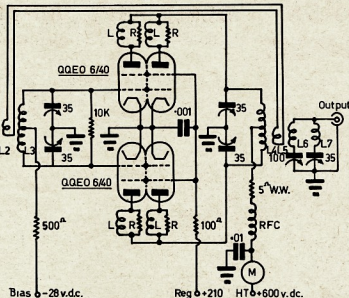
Peak flattening due to overdrive, incorrect load, insufficient bias, or combinations of same—splatter!!



Old gravel voice!

Distortion due to too much bias—spurious peaks indicating harmonics of voice frequencies.

(Continued on Page 18)



Schematic of Linear Amplifier for 50 Mc.

L-6 turns 22 B. & S. enamel wire wound on R-47 ohm 1/2 watt and 22 ohm 1/2 watt in parallel.  
L1-2 turns 16 B. & S. enamel, 3/4 inch diam.  
L2-1 turn link coil.  
L3-6 turns 10 B. & S. enamel.

L4-6 turns 1/4 inch copper, 1 inch diam.  
L5-1 turn link coil.  
L6-2 turns 14 B. & S. enamel, 3/4 inch diam.  
L7-Trap coil to resonate with local t.v. station which is in harmonic relationship to 50 Mc., approx. 200 Mc.  
M-500 mA. meter.

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# CLAMP TUBE MODULATION

Dear Sir,

I refer to the article on "Clamp Tube Modulation" by VK4MX in the January issue. It is not that I wish to offer criticism, in fact it would be difficult to do so with the number of assumptions and provisos made, but I do think C.P. has an odd point of view about the subject and has not really hit the nail on the head. I have used a similar system of modulation for a couple of years now and probably get results similar to VK4MX; this is what it amounts to.

Take an ordinary c.w. rigged p.a. and cut the drive. If this is the only source of bias, what happens: the p.a. tube probably burns up. The simplest way to prevent this happening is to insert a clamp tube.

Then one bright Sunday morning you get fed up with the old key and want to have a rag chew. No audio power amp. or mod. tranny or anything big, so you start thinking about the clamp tube (after all, it is already switching the p.a. current from some very low value to its peak value). Just remove the grid circuit of the clamp tube (it was biased from the p.a. grid circuit, wasn't it?), and arrange for class A operation (you don't want to distort the audio do you?).

Having connected the audio in to the clamp tube grid under class A conditions, you then fiddle the clamp's plate resistor (which is also the p.a.'s screen dropper) for linear modulation. This is very easy to achieve by plotting the r.f. output against the screen voltage on the c.r.o. and a perfect trapezium is easily obtained.

Whether or not the p.a. screen voltage you finish up with has a mean value of half what it was before you started on this lark depends entirely on just what tube you've got for a p.a. (we do want linear modulation, do we not?), and you'll be surprised just how low the power input to the p.a. can become with some p.a. tubes before linear modulation is achieved.

Anyway, start hollowing into the mike and you're on the air with good modulation and efficiencies like VK4MX mentions. Unfortunately, if you are still with me, all you have got so far is screen modulation—not clamp. Now this is the good oil and also where the name is derived.

Before you get ambitious phonewise, you had a clamp tube (controlling the p.a. output) which functioned in response to the presence or absence of drive bias and did nothing more than cut your p.a. tube expenditure. Now if you wish to conserve power when you're not nagging into the mike, as is often the case with mobile operation, why not control the mean carrier amplitude with the audio in the same manner as r.f. at the p.a. grid originally controlled it during key up conditions.

In this case you simply discard whatever bias arrangement you had through listening to me and slap a 0.01  $\mu$ F. and 10 meg. in the clamp grid circuit and produce "leaky grid" bias as do a few

commercial radio manufacturers in their audio stages for simplicity and cheapness. All that happens then is this:

No speak—no bias—large clamp current—low p.a. screen volts—low output. (By the way, it's not all hay; you're wasting power in the screen resistor and clamp tube—how much depends on what the p.a. tube is.)

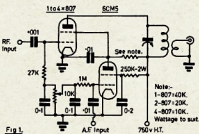


Fig. 1

Now speak—the audio is amplified—modulates the p.a. at the same time bias is developed at the clamp grid which reduces the average clamp current and naturally allows the p.a. screen to rise (still with the audio superimposed on it) and up goes the output. Depending on your choice of tubes, it is very easy to overmodulate the p.a. Admittedly it is impossible to exceed the power you radiated under c.w. conditions, but it is a simple matter to break the carrier at modulation troughs.

In fact this is usually the case with the arrangement described because after all, since rectification takes place at the clamp grid the positive-going peaks of audio are flattened there and appear the other way up at the p.a. screen, so every time you open your mouth, especially with words like "syllabiv", a whole shower of flattened carrier troughs go off into space. Still, with a bit of care in design, nobody seems to catch on that you are using clamp tube modulation although when you tell them it always seems that they knew all the time. They'd noticed that spluttniness or their S meter was kicking upwards a bit too energetically.

Anyway, that's clamp modulation, just a form of screen modulation plus a bit of carrier lift or controlled carrier if you like. Personally I like it, after all if you're got good carrier control, the bloke at the other end will probably be able to hear what's going on underneath as you pause to mouth a few choice but unspoken words at some poor but less skilled fellow motorist if you happen to be mobile.



Fig. 2

Also, if he (the other Ham—not the motorist) has the usual diode detector circuit in his receiver (where the following valve's grid resistor is twice the value of the diode load) he will appreciate your audio belting in from nil carrier level. He gets no audio below 30% of negative modulation peaks from any 100% modulated carrier of steady mean value at any time, which is why there always seems to be a lot of audio when clamp transmissions are received, but that's a long and involved theory of my own that no one has yet bought into, so I won't digress at this point.

But what about these nasty little distorted peaks? Can the circuit be modified so that the audio lifts the carrier without this type of distortion and yet remain truly clamp modulation in every sense of the word? I refer to the circuit (Fig. 1) in which I think I have found the solution.

Most of the details of operation have been discussed, so I will carry on with an explanation of the new features. You will notice that the clamp bias is derived from the p.a. grid current and that a pentode is used to clamp the p.a. screen. The clamp grid never draws current, thus the undesirable clipping of positive-going peaks is avoided.



Fig. 3

Carrier lift is brought about by the slight increase in clamp screen current when audio is applied to its grid because this results in a comparatively large drop in clamp screen voltage. (I say comparatively because it is already quite low—the 6CM5 needs very little screen voltage to get it percolating.) This in turn causes the clamp plate current to fall, the plate and, of course, the p.a. screen voltage rises and up goes the carrier output with audio superimposed.

The point of operation (or degree of lift and linearity) is adjusted by the 10K pot. and the c.r.o. trapezium will indicate excellent linearity (if the p.a. tank is fully loaded—very important) and as the amount of audio is increased the trapezium not only projects to a triangle but "blows up" or "blooms" in the process, rather like a t.v. picture tube when the 152 is faulty, which indicates of course a carrier lift.

I usually tune my rig (4 x 807) under c.w. conditions by turning the bias knob to full bias and then readjust this clamp bias for operation, i.e. 200 mA. at 750 volts, then bias back to 50 mA. At zero modulation the aerial current is approx. 400 mA. and at full modulation just over 600 mA. into 300 ohm ribbon. Assuming an s.w.r. of 1, which is unlikely, this represents an increase of mean carrier from 48 watts to 108 watts.

(Continued on Page 7)



# Field Day Power Distribution\*

## Simple Control Centre for Multiple Installations

THEODORE J. JONES, W3CHU

### CABLES

Interconnecting cables are made of three-conductor underground-type plastic-covered electrical cable. This cable consists of two No. 10 wires for the electrical load, and one No. 14 wire used for the common ground connection. (This cable is often referred to as two-conductor No. 10 cable with ground wire.) The plastic covering of this cable is tough and durable. The two generator cables are identical and are each 10 feet long.

If feasible, a three-contact female twist-lock receptacle should be mounted on the generator base or frame and the generator output termination (whatever type it may be) wired to the twist-lock receptacle. The ground terminal of the receptacle should be connected to the generator frame. In this case the input end of the cable will be fitted with a mating twist-lock plug.

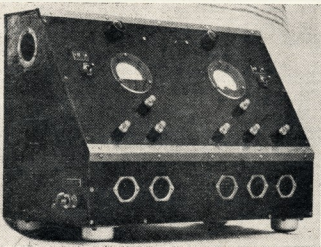
If there is some reason why this adaptor arrangement cannot be installed, the input end of the generator cable should be fitted with a connector or other device matching the generator output termination. The output end of each generator cable should be fitted with a female twist-lock plug to fit the male input connectors of the distribution unit.

The five distribution cables are also identical. Each is 100 feet long, fitted with a male twist-lock connector at the input end, and a metal multiple outlet box at the output end, as shown in Fig. 2. Four receptacle

● This well-thought-out Field Day power distribution centre not only speeds up installation, but also concentrates fusing and line-voltage monitoring at one spot, making it unnecessary to search far in case of a power failure. The principle applied here to distribute power from two generators may be extended as required.

12" deep and 16" high, and is fitted with a sloping upper panel and a vertical lower panel, both of which should be made of  $\frac{1}{4}$ " Formica or other insulating material. The recessed male input connectors, J1 and J2, are mounted one on each side of the cabinet near the top. The five female output connectors are mounted in a row on the lower vertical panel, divided into groups corresponding to the two generator outputs. Meters, control switches, pilot lamps and fuses are similarly grouped above on the sloping panel. The fuse holders are of the "indicating" type which makes it easy to spot a blown fuse.

Mounting feet are provided to keep the cabinet off the ground if other means are not available, and handles on each side facilitate carrying. Flushing handles leave no projections when not in use.



Chester County's Field Day power-distribution panel. Power from a  $1\frac{1}{2}$  k.v.a. generator fed in at the connector at upper left is distributed to equipment cables plugged into the two connectors at lower left. Above, on the left-hand side of the sloping panel, are a red indicator lamp, line switch, line voltmeter, and indicating-type fuse holders. A similar arrangement with three outlets on the right-hand side, distributes the power from a  $2\frac{1}{2}$  k.v.a. generator. Ground connection is made at the wing-nut terminal, lower left.

AS a result of previous experience in supplying power to each of several rigs during Field Day activities, the need for a safe, convenient and reliable power distribution system became apparent to the members of the Chester County (Penna.) Amateur Radio Club. The gear illustrated in the accompanying photograph and sketches, which was subsequently designed and built as a club project, well proved its worth in our last Field Day expedition.

The objectives sought in the design and layout of the unit were reduction of generator hash, a common electrical ground system for all equipment, and the elimination of power interruptions caused by cable connections working loose. In addition, the need for cables of adequate length, common polarisation, monitoring of line voltages, and proper fusing for overload protection was taken into account. The consideration of these factors led to a practical and easily built piece of equipment which has proved to be a welcome asset to our club's Field Day equipment.

### DISTRIBUTION CIRCUIT

Fig. 1 shows the wiring diagram of the distribution unit. Provision is made for the convenient distribution of the outputs of two portable gas-driven generators. A  $2\frac{1}{2}$  kilovolt-ampere (k.v.a.) generator feeds into J1 from where it is distributed through three outlets, J3, J4 and J5. Similarly, a  $1\frac{1}{2}$  k.v.a. unit feeds in at J2 and is distributed from two outlets, J6 and J7.

Throughout the distribution system three-contact twist-lock plugs and receptacles are used for making connections. These connectors not only provide the required mechanical security but the third contact makes it possible to maintain automatically a common ground connection.

Each generator output passes through a line filter to reduce generator commutator interference, and thence to a red lamp which provides a visual indication of whether or not generator output is being received at the unit. A d.p.d.t. switch connects the generator output to the distribution outlets which are individually fused in one side of the line, a common fuse being used in the other side of the line. Generator output voltage is monitored by a voltmeter. The common ground connection is brought out to a heavy terminal fitted with flat washers and a wing nut. In use, this terminal is connected to a metal rod driven into the ground, or other convenient ground connection.

### CONSTRUCTION

The cabinet shown in the photograph is made of  $\frac{3}{4}$ " plywood. It is 24" wide,

\* Reprinted from "QST," April, 1962.



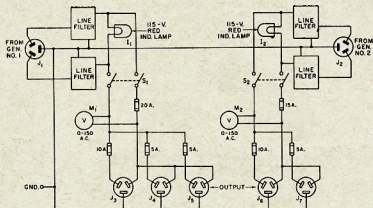


Fig. 1—Wiring diagram of the distribution unit.



## COMBINED FIGURES-LETTERS

In view of the appearance of new "figures-letters" prefixes on the Ham bands from time to time, hereunder is a complete authorised list. Many of these prefixes are already in use, but a majority have still to be implemented.

It is hoped that this list will save a lot of queries and enlighten many Amateurs what to expect in the future.

3A—Monaco	5W—Samoa
3B—	(American)
3C—	5X—Uganda
3D—Canada	6A—U.A.R.
3E—	6B—(Egypt)
3F—	6C—U.A.R. (Syria)
3G—Chile	6D—
3H—	Mexico
3I—China	6J—
3J—	6K—Korean
3K—Tunisia	6L—Republic
3M—Vietnam	6N—
3N—Rep. of	6O—Italian
3P—Guinea	Somalland
3Q—Norway	6P—
3R—Poland	to Pakistan
3S—	6S—
3T—Mexico	6T—Republic of
3U—	6U—Sudan
3V—	6V—Republic of
3W—	6W—Senegal
3X—	6X—Malagasy
3Y—	7A—
3Z—	to Indonesia
4A—	7B—
4B—	7C—
4C—	7D—
4D—	7E—
4E—	7F—
4F—	7G—
4G—U.S.S.R.	7H—
4H—	7I—
4I—	7J—
4J—	7K—
4K—	7L—
4L—	7M—
4M—Venezuela	7N—
4N—	7O—
4O—Yugoslavia	7P—
4P—Ceylon	7Q—
4Q—	7R—
4R—Peru	7S—Saudi Arabia
4S—	8A—
4T—U.N.	to Indonesia
4U—	8B—
4V—Haiti	8C—
4W—Yemen	8D—
4X—Israel	8E—
4Y—I.C.A.O.*	8F—
4Z—Israel	8G—
5A—Libya	8H—
5B—Cyprus	8I—
5C—	8J—
5D—	8K—
5E—Morocco	8L—Saudi Arabia
5F—	8M—San Marino
5G—	8N—
5H—Tanganyika	8O—
5I—	8P—
5J—	8Q—
5K—Colombia	8R—
5L—Liberia	8S—
5M—	8T—
5N—Denmark	8U—
5O—	8V—
5P—	8W—
5Q—	8X—
5R—Malagasy	8Y—
5S—	8Z—
5T—Mauretania	9A—
5U—Niger	9B—
5V—Togo	9C—
	9D—
	9E—
	9F—
	9G—
	9H—
	9I—
	9J—
	9K—
	9L—
	9M—
	9N—
	9O—
	9P—
	9Q—
	9R—
	9S—
	9T—
	9U—
	9V—
	9W—
	9X—
	9Y—
	9Z—

\*Compiled by Eric Trebilcock, W1A-L3M2.  
\*International Civil Aviation Organisation, H.Q. in Montreal, Canada.

J1, J2—115 volt panel lamp, red.

J3, J4—Recessed male three-terminal twist-lock cable connector.

J5—Push-mounting female three-terminal twist-lock receptacle.

M1, M2—0-150 volt 60 cycle a.c. voltmeter.

S1, S2—20 amp. d.p.s.t. toggle switch.

Line filters are pin-network type rated at 115/220 volts, 25 amperes.

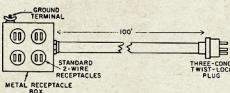
Fuse holders are indicating type.

boxes are standard items in electrical supply stores, and require only the addition of the wing nut. Any unused holes should be plugged with caulking compound to exclude rain. The receptacles are of the two-contact type to match the standard a.c. plugs of equipment and appliances. (In Australia we standardise on three-pin plugs and sockets and it is recommended that it be used to match your gear.—Editor "A.R.") The ground terminals of all equipment operating from any one distributing line should be connected together and then to the wing nut ground terminal on the outlet box. The ground wire of the cable is secured internally to the box, and the box should be grounded by a No. 10 wire from the wing nut to a metal rod driven into the earth.

The common ground system, elimination of all exposed hot terminals, weatherproof cables and adequate fusing have proved their worth in reducing electrical hazard to a minimum. The twist-lock connectors help to make the system mechanically foolproof, and identical cables avoid the confusion that often reigns at a Field Day set-up. It is not necessary to hunt for the right cable length with the right terminations, and the maximum permissible distance between control centre and equipment is known in advance.

The Chester County Radio Club is proud of this small contribution to the fun and safety of Field Day exercises, and passes this along to others who may be interested in constructing similar gear for their own activities. ●

Fig. 2—Sketch showing make-up of distributing cables. Input end terminates in a three-contact twist-lock male plug. Output end terminates in a metal box fitted with a wing-nut ground terminal and the desired grouping of standard two-contact a.c. outlets for equipment. (In UK standardise on three-pin outlets.)



## CLAMP TUBE MODULATION

(Continued from Page 5)

It is a very handy system for local rag chews, you can bias back to about 10 watts, throw the mike in one corner, carry on with the new project—whatever it is—and chat merrily away at low power. Don't forget the audio gain must be reduced as the carrier is wound back!

In conclusion, I would comment that no Heising type dropper and by-pass are found necessary between the clamp plate and p.a. screen using the tubes indicated; not that the carrier is completely suppressed during negative

peaks, but nearly so, particularly when compared to the peak carrier value due to the lift during modulation.

The rise and fall or "sliding action" of the clamp tube screen has an optimum time constant using the 0.2  $\mu$ F capacitor indicated, larger values do not affect the rise time very much, but cause the carrier to fall too slowly when not speaking, i.e. 0.2  $\mu$ F discharges through the valve (fairly low impedance) but has to charge up through 250K (do not alter).

A 12AX7 microphone amp. gives ample audio gain using a crystal microphone.

—Don Law, VK2AIL.

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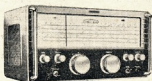
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# SIDEBAND TOPICS—BUD POUNSETT,\* VK2AQJ

## TRANSISTORS AND MECHANICAL FILTERS

Only a couple of years ago, the Australian Amateur who was fortunate enough to possess a mechanical filter was the object of envy to his colleagues. He was either a wealthy man or single, or had a good friend in the United States. Today mechanical filters are readily available in this country from several sources.

Transistors are also here to stay. They represent one of the most dramatic recent developments in electronic history. It is only natural that mechanical filters and transistors be combined to produce the modern method of radio telephone transmission—Single Sideband.

One of the features of transistor usage is the large reduction in heat in the equipment and the resulting decrease in power consumption. Power supply commitments are minimised

widths packed into its twenty or so pages. It is available from the Collins Radio Company office in Melbourne.

Here are some interesting comments of a very practical nature which are quoted from Bulletin 1031. A study of the input and output circuit of the filter will illustrate the next paragraph.

"The small size and high performance characteristics of mechanical filters make them a natural choice when designing bandpass circuits using transistor amplifiers. The filters can be readily matched into the low-resistance circuits (1,000 ohms or less) encountered with transistors by using a series resonant termination.

"The lowest value of impedance that can be matched is determined by the extent to which the stray capacity across the filter can be minimised. This impedance will be in the order of magnitude normally encountered with grounded emitter amplifiers.

"In some applications, such as balanced modulators, it is desirable to

## A NEW LINEAR

Vic Kitney, VK6VK, of Perth, has been active on s.s.b. for many years and at that time has spent long hours in experimenting with various aspects of both transmitting and receiving sideband. Vic has been "playing around with" (to use his own words) this variation of an 813 linear amplifier. The design is the same as the one we are all familiar with, except for the method of regulating the screen voltage. This has presented a problem in the past, but this novel approach works well indeed. I can vouch for the quality of the signal, having heard it on 20 mx.

The screen current swings from about 1 mA. to nearly 30 mA., so the regulator tubes are very pretty to watch under voice modulation conditions!

A word of warning here. If light loading is used to couple the output to the antenna, high screen current will be encountered and this will be

(Continued on Page 11)

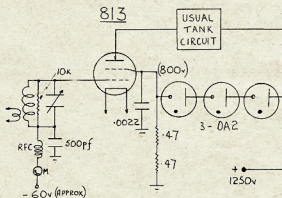
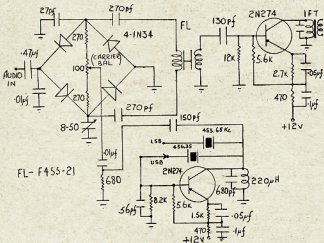


Fig. 2.—VK6VK Linear Amplifier.

Fig. 1 (left).—The modern approach to filter exciters.

with a considerable saving in weight and space. These alone are of prime importance in portable/mobile equipment.

The mechanical filter gives you, in a very small package, almost the ultimate in bandpass filters. Of course, the old saying about not getting something for nothing applies here. The mechanical filter is an expensive device but its cost can be halved by using the one filter for both transmission and reception. You have no doubt noticed the fast accelerating trend toward transceivers in commercial Amateur equipment and several Australian Amateurs have already built transceivers for themselves.

Fig. 1 shows the marriage of the Collins filter with transistors. This forms part of a circuit of a 7 Mc. transmitter in the Collins Radio Company Bulletin 1031. This publication has a great deal of information on mechanical filters of various sizes, shapes and band-

terminate the filter into a balanced load. For this reason, each set of terminals on the filter is balanced to ground, eliminating the need for isolation transformers or amplifiers in circuits of this type.

"When mechanical filters are used in bandpass circuits, there are a number of precautions that must be taken if full advantage is to be derived from its steep skirt rejection capabilities. For example, the use of short wires between the filter terminals and the termination circuitry; effective shielding between the input and output, and the use of a common ground for the filter input, shield and output. These precautions prevent the input signal from partially bypassing the filter through inductive or capacitive coupling or ground loops."

Grateful acknowledgments go to Reg Tutton, VK3SF, and to the Collins Radio Company.

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## A V.F.O. Adaptor for Geloso Signal Shifters\*

BERT SHUTTLEWORTH. ZL410

**M**ANY Amateurs have found trouble in the oscillator section of the older (3-tube) type of Geloso signal shifter. There appears to be numerous complaints, some of the common ones being a sudden frequency jump of about 10 to 20 Kc for no clearly determined reason, insufficient stability for use with an s.s.b. adaptor like the SB-10, poor calibration and reset accuracy, mechanical instability in that one only needs to touch the bandswitch knob on some of the older well-used models and the frequency shifts, and breakdowns in the three-gang tuning capacitor itself.

These v.f.o. units were built to a price, of course, and large numbers have taken advantage of them. It is likely that as so many people have built really fine transmitters around a Gelsoso, they are loth to break them up. It should be realised that the foregoing is not a slight on the designer of the units. In fact he did a darned good job and filled a gap where there was a big demand.

This adaptor was built to effect a cure of two of the faults mentioned, and to avoid breaking up an existing rig, as well as to try out a few ideas. Since the troubles occurred only in the oscillator section, what was wanted was a device which would simply take the place of the 6J5G tube. One pulls out the tube and plugs in the adaptor, no modifications to the Gelsco being necessary.

A few observations about the design of an oscillator concerning stability may be in order. The popular scheme is to use a tube with a high Gm very lightly coupled to a tank circuit, with the feedback loop as small as possible, like in the Clapp circuit. The tuned circuit has as high a Q as possible. With a high Q lightly loaded tuned circuit only a small circulating current flows, so that self heating and drift due to this current is minimised. If the feedback is adjusted to the point where oscillation is not over vigorous, the grid bias will be low and the tube will not have to push too hard. The ultimate in this is probably the so-called class A oscillator which uses cathode bias only and practically no grid current flows.

With the advent of Clapp oscillators appearing to lose favour to high C Colpitts and their derivatives, and higher Gm tubes being used with higher C tuned circuits, it was thought that a "back to basic principles" trial would be a good idea. After all, the major problems affecting stability, apart from obvious ones like layout and wiring, heat insulation, etc., occur not with the tube, or its feedback loop, or its loading, or its coupling, but with the tuned circuit itself. And the critical part of the tuned circuit is the capacitor, its mounting, and its dial system. It must be admitted of course that factors pertaining to the tube and its

circuitry are important, but no one of these is paramount.

Once this is accepted, it may be realised that it is just as reasonable to build an oscillator with a low C tuned circuit and low Gm tube as it is with a high C and high Gm pair. All other considerations are common to any sort of oscillator.

Things to ponder over are devices like electron coupling (which with regulated power supplies loses some of its virtue), load variations, heater-cathode thermal stability, where the low gain tube with a long cathode structure need be no worse and is often better than a high gain short structure tube, input capacity, where variations due to tube heating, etc., favour the low gain tube, direct, capacitive or inductive coupling of energy from the oscillating circuit, and so on.

Weighing up all this stuff into a combination for some particular design is prone to be a bit of a juggle, and conclusion could be still wide open at the finish.

faced with a capacity change and the consequent shift of frequency. The best insulating materials are therefore a prime necessity. High quality ceramics are outstanding in this respect.

The tuning capacitor itself is very critical as it is essentially a variable device in its function. Wide spacing is desirable, solid bearings and casing, and brass or low temperature coefficient of expansion metal plates. Tension winding of the inductor, preferably on a ceramic former, should reduce inductance changes to a low factor.

In the v.f.o. described here, the lowest gain tube of the 12AU series was adopted (12AU7A) in a Hartley circuit. The highest possible L to C ratio was used, due allowance being made for bandsetting capacity, tuning range, etc., in this way providing a high Q circuit. The grid of the oscillator was connected to the tuned circuit through a high stability 1 watt isolating resistor and output taken off inductively from the coil. The tuning range is from 3.5 to 3.65 Mc. but it could just as easily have

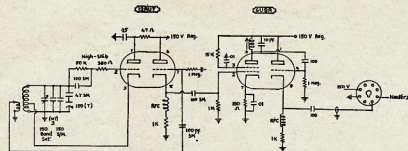


Fig. 1.—Circuit of the V.f.o. Adapter for the Geloso Signal Shifter.

However, the main causes of drift are thermal and mechanical. The thermal drift can cause some real trouble in elimination, and there is only one satisfactory way around it. Use high quality components, not readily available, that are also kept temperature variations around the sensitive parts of the circuit to a minimum. Mechanical difficulties should be small if the thermal stability angle has been catered for, at least as far as individual components are concerned, and you will be wiring in a not very different way. It is certainly not necessary to use very heavy and stiff wires for connection but it is essential to make sure nothing is in stress, or else left even slightly floppy, and this includes the wiring. Plenty of tie points should be used. In a separate article on a similar matter, I have shown the tubes well away from and above the tuned circuit.

Thermal drift is mostly due to capacity changes and to a very much smaller extent, inductance changes. Every piece of insulation around the circuit is the dielectric of a capacitor. If this dielectric is allowed to change even infinitesimally with heat, one is

been made to cover the full 80 metre band. An ARC5 coil and capacitor was available and was used because it is probable that nothing else readily obtainable would be of better quality.

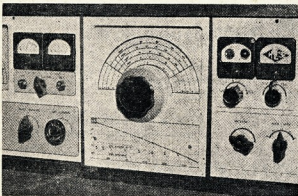
The dial system is the ZL4PJ arrangement. The capacitor is mounted so that the worm gear is to the top, and a free running 2" diameter drum with scale attached is fitted on over the main worm drive shaft, and string driven with a loaded nylon cord to a similar drum which takes the place of the old ARC5 dial disc. The drums are made of the lids of adhesive tape containers. Of course there is no reason why any other suitable dial and capacitor arrangement could not have been used.

The output from the oscillator is coupled inductively to the second half of the 12AU7A, which is arranged as a cathode follower with an input resistance of several megohms. In turn this stage supplies signal to the pentode section of a 6U8A, either as an amplifier or a doubler. The plate circuit may be tuned to 80 metres or 40 metres, or switched between both if desired. In the v.f.o. depicted, 20 metre operation was the main goal, hence the restricted

\* Reprinted from "Break-In," Feb. 1963.

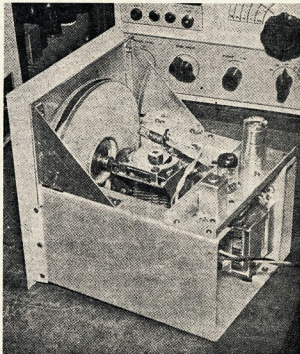


range and the fact that the 6U8A plate circuit was not bandswitched. The triode section of this tube is a second cathode follower, whose output impedance is approximately the same as 6J5 cathode circuit in the Geloso. When the new v.f.o. is plugged into the 6J5 socket, output from the exciter is substantially the same as when the original is used.



Above: The V.f.o. Adaptor situated between the transmitter and receiver.

Right: Back view of the unit, showing details of construction.



The oscillator coil has 20 turns,  $1\frac{1}{4}$ " diameter and  $1\frac{1}{2}$ " long, with the cathode tap five turns from the grounded end, and wound on an ARC5 ceramic former. The coupling coil is 10 turns wound over the grounded end and separated by a few layers of plastic tape. Any one wishing to duplicate this exactly, and in possession of a complete coil, could use the ready made inside former and winding, connecting to pin 8 and pin 4, the latter being the grounded one.

The 80 metre plate coil for the 6U8A consists of 75 turns of 38 s.w.g. jumble wound to a length of  $\frac{1}{4}$ " on a  $5/16$ " diameter shielded former, and slug tuned.

The 3 pF. negative temperature coefficient capacitor in the oscillator tuned circuit was fitted at the outset, but it is probably not having much effect. The whole structure is so open that no generated warmth is confined within the cabinet.

The tuning range of the 150 pF. capacitor is restricted with a series 47 pF. silver mica. It is not linear, but the bandwidth is substantial—2 Kc. per knob rotation at the 3.5 Mc. end and 4 Kc. at the 3.65 Mc. end.

It is definitely an advantage to use a ceramic socket for the 12AU7A. Re-

member that heat is readily transferred into it from the tube, and the dielectric constant will alter if moulded plastic or similar is used.

Button ceramic capacitors are satisfactory around the 6U8A but not around the oscillator. One should keep the length of co-ax between the v.f.o. and the Geloso to three feet or less, and the filament heater, earth and h.t. leads

drift is very small and takes no more than 60 seconds.

Perhaps some of the statements made in this article could be considered worthy of debate. If this be so, what about an argument or two in this journal? Discussions of such a nature can be quite stimulating. But, anyway, the proof of the pudding is in the eating.

may be laced onto it and wired into the plug. In doing this, make sure that the heater wire is connected to the correct pin or the filament supply will be grounded.

There is so much high impedance isolation between the oscillator and the Geloso input circuit that the latter has no load effect on the former. Nor has keying the transmitter any effect on the note. Hundreds of 20 metre contacts have been made using this v.f.o. and it has proved to be extremely stable. Many of the QSOs were with Collins owners, some of them quite lengthy rag chews, and with the receiver being used as a c.w. monitor as well as its normal service, it has been apparent that the beat note transmitted and the one received did not differ to any audible extent.

This indicates that if it is not in the same class as the Collins, it is certainly comparable and would be eminently suitable a source for supplying carrier to an SB-10 or similar unit. Warm up

## SIDEBAND TOPICS

(Continued from Page 9)

detrimental to the regulator tubes. The 813 will not like it either!

It can be seen that, within the limits of the VR tubes, the screen voltage will be maintained at a constant level, in this case 800 volts. Fig. 2 shows the circuit of this amplifier.

## TECHNICAL ADVICE

Do you have a problem? Why won't that piece of gear work? Arie Bles, VK2AVA, has been kind enough to volunteer his services as s.s.b. technical adviser. How Arie manages to fit in matching crystals and building filters, erecting antennae for DX work on 3.5 and 7 Mc., and chasing the said elusive DX is beyond me; but if you do have a poser, do not hesitate to write Arie; he has had considerable experience in most Amateur Radio fields.

When you write, please enclose a large stamped self-addressed envelope.

The address for the VK2AVA s.s.b. technical advisory service is: Mr. Arie Bles, 33 Plateau Road, Springwood, N.S.W.



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# SEMI-AUTOMATIC BEAM ROTATOR

C. J. TATUM,\* VK5DY

WHEN Tubby VK5NO, or was it the wind, decided to reshape his G4ZU beam, the gear box and motor came my way. At this time no definite plans for beam rotation had been made. Some experimental work using transistors had been carried out with a somewhat different scheme to the one detailed here. This soon came to a halt when the special type of motor could not be obtained.

The original idea for this system came from the donor of the above gear. A circuit was evolved using valves and worked very well. Valves require power supplies which are bulky and heat dissipating. Transistors are ideal for these ancillary pieces of gear.

Any motor which can supply the load demand through the gear box will do. The motor used in this unit is a 50 volt transmit mag slip, and originally turned the G4ZU beam. Relay contacts should be capable of direct control for low power motors, or to switch a contactor for high power units.

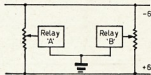


Fig. 1.

The main problem on the mechanical side is to translate the 270° potentiometer swing to one of 360° or greater. This is a ratio of 0.75 to 1, potentiometer to beam position control. Cord drum drives, as used in radio sets, can be used but may prove difficult to obtain. An easy solution is to use screw caps from jars. A bush being soldered to the centre for attaching to the  $\frac{1}{2}$ " shafts of potentiometer and direction indicator control. Into a small hole drilled in the grooved edge of the drum can be soldered a peg of 18 s.w.g. wire. One turn of the cord around this will pre-

\*24 Short Road, Elizabeth, S.A. Member of the Elizabeth Amateur Radio Club.

vent slip. Cord tension is accomplished as shown in Fig. 3, the potentiometer and drum being fitted to a spring-loaded pivot arm. Both potentiometers are installed in the same manner. The beam drum is attached to the final drive shaft by clamping it between two  $\frac{3}{4}$ " electrical conduit sockets. This same size conduit is also used to turn the beam.

Operation of the circuit can best be understood by reference to Fig. 1. The two potentiometers, P1 and P2, form a bridge balanced around earth. A

is then very near earth. Consequently V2 has no forward bias and is therefore in the "off" condition, relay A being unoperated. A positive voltage on P1 will neutralise the forward base current into V1. The gain will be reduced to such an extent that the collector will rise to the rail voltage. The resultant forward current into the base of V2 will switch this transistor and relay on. The opposite or negative voltage applied to V4 will have no effect, the transistor already being in the "on" state, and V3 will stay "off".

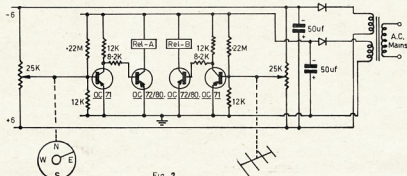


Fig. 2.

position change in either of the two arms create an unbalance, and therefore a voltage differential between the inputs to relay A and relay B. The relay which receives this voltage in the positive direction will be switched on, driving the motor and beam. This in turn rotates the beam potentiometer in a direction to "back off" the voltage differential. As the beam rotates, this voltage will become less and less until balance is restored. The motor will then switch off.

Two transistors are used to operate each relay. V1 is a directly coupled amplifier and in the balanced condition R1 provides just enough forward base current to keep this transistor in the "on" condition. The collector of V1

Gain in V1 and V4 is very high, in fact they act as switches, being in one state or the other. When one relay is operated the motor and P2 will continue to run until balance is restored, dropping out the relay. Flywheel effect will carry P2 beyond balance and switch on the other relay, causing the motor to run in the opposite direction. This may occur several times and is known as "hunting". To overcome this one amplifier must be made less sensitive. By decreasing the value of R1 the forward bias to V1 is increased. A larger differential voltage between P1 and P2 is now required to switch on V1 and V4, and overshoot by P2 can be tolerated.

(Continued on Page 15)

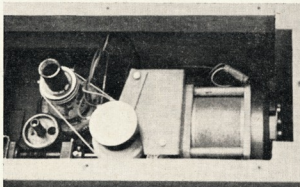


Fig. 3.—Showing the mag slip motor.

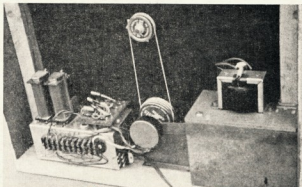
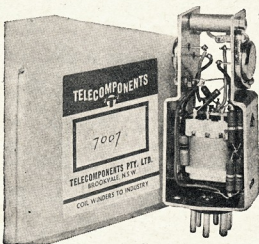


Fig. 4.

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(as featured in "Radio, TV & Hobbies," March, 1963)



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In the writer's unit RI is 150K, but the value will differ with other transistors. Also of course the allowable differential is dictated by the damping factor of the actual beam installation. If this is optimum the beam can be

inched round by steps of five degrees or less.

The relays used are 3000 types with a coil resistance of 200 ohms. Lower values of resistance can be used, but transistor ratings must not be exceeded.

Each relay is fitted with two sets of make contacts. One pole on each is used to switch voltage to the "run" winding of the motor. The other poles supply the "start" winding with a suitably polarised voltage to start the motor in the correct direction.

The power supply is very simple. Many small germanium diodes are suitable and will supply about 30 mA. for the relays. Two electrolytic capacitors and a small transformer with two 6.3 volt windings make up the rest of the supply. Peak rectified voltage for the relay circuits is about 9 volts, dropping to 6 volts on load. The potentiometer supply is also 9 volts. The box in the right hand corner of Fig. 4 houses a 50 volt transformer to drive the magstrip motor shown in Fig. 3. By the way, this motor lends itself admirably to the job. To drive, simply apply 50v. across two of the star-connected windings. The third winding is then taken via a 50  $\mu$ F. capacitor to either side of the 50 volt supply.

Fig. 5 shows the general construction of the equipment, and size can be measured by the QSL card. In this case a great circle bearing map as supplied by the VK5 Division of the W.I.A. is used. V.h.f. operators with very directional beams will find this a rapid and accurate method of swinging same. Maps can be made to cover their own particular area, or large road maps may be satisfactory.

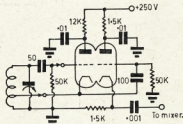
Many transistors today are cheaper than valves, and yet articles on Amateur equipment using them are very few. Maybe these few notes will stimulate further interest in their use. ●

Fig. 5.—General construction of the equipment.

## HINTS AND KINKS

### A COMPANION FOR THE LIKE-NEW MIXER

The November 1959 issue of "Amateur Radio" contained an article under my signature concerning the "S9'er," which was a twin-triode circuit designed to plug into the first r.f. stage of any receiver using a single-ended tube, although I included a diagram for converting most of the tubes with the grid on top. I claimed no originality for the article, giving full credit to "CQ," May 1959, and some further information appeared in "CQ" for December, 1959. The results obtained, signal-to-noise level, etc., more than fulfilled the claims made.



Since then the "Like-New Mixer" has appeared, which is along the same lines. This also is an outstanding success, so much so, that many others beside myself have reconstructed the

front-end of their receivers and are more than satisfied with the results.

Wishing to change the oscillator circuit into a twin triode set-up to bring the entire front-end up-to-date, I hunted through back copies of "CQ" and discovered in the December 1957 issue just what the doctor ordered.

The circuit is self-explanatory, and I have tried it with every type of tube procurable in VK5, with no difference in practical performance. Although the original circuit shows a 6SL7, no change in circuit component values were necessary for any other tube types, such as 12AU7, 12AX7, 12AT7, 6BK7, 6BQ7 and 6SN7. Full credit for this circuit goes to Leonard E. Geisler, Chief Engineer, Japan Electronic Trading Company.

This now makes a complete front-end of twin triodes, and is well worth the change-over. Try it, you will be more than pleased.

The 0.001  $\mu$ F. coupling condenser to the mixer is OK. I was a bit doubtful and tried smaller, but the 0.001  $\mu$ F. seemed to perform the most consistently. —Warwick W. Parsons, VK5PS.

### IT HAS BEEN SAID . . .

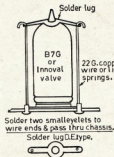
"Anyone who has had actual contact with the making of the inventions that built the radio art knows that these inventions have been the product of experiment and work based upon physical reasoning, rather than on the mathematicians' calculations and formulae. Precisely the opposite impression is obtained from many of our present-day text books and publications."

—Edwin H. Armstrong (Inventor of F.M.)

### SECURING MINIATURE VALVES

Here is a cheap method of securing B7G and innoval miniature valves in place.

Use a two-leg solder lug over the glass sealing pip and secure this to the chassis with 22 or 24 gauge copper wire or very light springs.



This is an old trick utilised in servicing car radios with "loose" valves.

—B. M. Oliver, VK2NU.

### KEYING GELOSO V.F.O.

A tip to the boys who like to key the oscillator of the Geloso V.f.o. Put a cathode follower stage between the oscillator and the buffer. It gets rid of the yoo! This specially applies to the Model 104.

—VK3ARX.

# Modifications to "A 100 Watt P.E.P. Band-Switched Phasing S.S.B. Transmitter"

The author has recommended three modifications to the "100 Watt P.E.P. Band Switched Phasing S.S.B. Transmitter" ("A.R.", Oct. 1962) which may be of interest in connection with the above transmitter.

(1) The earth connection of the vox output 6AU6 at the junction of the 2K and 25K resistors to be lifted and made through a normally closed push button or key switch (see Fig. 1).

This allows push-to-talk operation as well as the normal voice, and is an advantage.

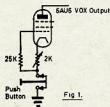


Fig. 1.

[An erratum has occurred in the above drawing. The top of the 25K resistor should go to the screen-grid, not the control grid.—Editor.]

(2) The 6CL6 mixer-driver cathode bias resistor to be reduced from 320 to 120 ohms (see Fig. 2) to allow more drive on some of the higher frequency bands.



Fig. 2.

Many protective systems should suggest themselves, however the following is fairly simple and will give the necessary protection (see Fig. 3).

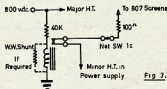


Fig. 3.

A relay, which will operate on approximately 20 mA. or the normal bleeder current, could be inserted in series with the earth end of the 40K bleeder resistor and earth, in the major

h.t. power supply. Should the relay be too sensitive it could be shunted with a suitable wire wound resistor to assure the relay would fall out when the major h.t. dropped below a reasonable figure.

The screen voltage previously taken from the minor h.t. inside the exciter will now be obtained through the normally open contacts of the relay from the minor h.t. inside the power supply unit, and taken up to the exciter by another connection. This may mean changing to a larger male and female plug and socket.

The relay will now operate when SW3 is made, its contacts will close and voltage applied to the screens of the 807s via net SW 1c. Failure of a pre-determined drop in the major h.t. will cause the relay to fall out, removing the screen supply.

Of course it may be preferred to take the screen voltage from the major h.t. and regulate it with the appropriate number of VR tubes, which would supply its own protection.

—A. S. Mather, VK2JZ.

All members of the W.I.A. are reminded that annual subscriptions are now due and should be paid promptly to their Divisional Secretary. Non financial members will not receive a copy of "A.R." and back copies may not be available upon request. To preserve continuity of your files of "A.R." please pay your annual subscription now.

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# VK-ZL-OCEANIA DX CONTEST, 1962, RESULTS

In presenting the results of the 1962 VK-ZL-Oceania DX Contest, I would first like to thank all those who submitted logs and to congratulate the winners. In the Overseas Section the various band scores have not been indicated although awards have been issued to the top scorers on individual bands as well as to the overall top scorers.

N.Z.A.R.T. decided to broaden the scope of the Contest this year to include Oceania as an area for the world to contact in addition to VK and ZL. Every effort was made to ensure plenty of activity from the available Oceania DX areas but it is regretted that numerous promises of activity from rare DX areas did not materialise. Nevertheless, there was an increase of some 12% in the number of logs returned. Without a doubt the inclusion of Oceania was an excellent move—a fact proved by the many complimentary remarks made by overseas contestants. Lack of VK and ZL activity is still cause for concern however.

It is regretted that this Contest clashed with a Contest organised by East Germany. It must be pointed out that the VK-ZL-Oceania DX Contest was held over the same period (first two week-ends in October) as it has been for many years as the VK-ZL DX Contest.

Once again N.Z.A.R.T. is providing attractive coloured awards for Contest winners in the belief that such items are of greater value than mere "certificates". The 1963 Contest will be organised by the Wireless Institute of Australia, but N.Z.A.R.T. will again be responsible for the Contest in 1964 when we will be happy to have your company. It is our desire to make this Contest as enjoyable and as rewarding as possible. Because of this your comments as a competitor are of great interest and these are solicited. All comments will be gratefully received.

Good DX and 73,

Jock White, ZL2GX,  
Contest Manager, N.Z.A.R.T.

## AUSTRALIA

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22C	—	2875	—	—	2875
VK3ARX	1445	5640	2155	—	9240
3DQ	2645	3590	1925	135	8295
3AXK	1880	3775	2340	—	7995
3TL	—	6100	—	—	6100
3RJ	785	1980	1045	—	3810
3XB	2110	55	1420	—	3580
3KS Check	—	—	—	—	—
VK4SN	—	1805	1930	—	3735
4SD	—	2370	—	—	2370
4JB Check	—	—	—	—	—
VK5CV	705	4265	2565	—	7535
5RX	—	3690	—	—	3690
5NO	3320	—	—	—	3320
5WO	—	1295	550	160	2005
5JE	1190	—	—	—	1190
VK6RU	495	4760	6405	—	11660
6AS	105	145	235	—	485

VK7DK	555	3190	740	—	4485
7SM	715	2805	745	—	4265
VK8UX	—	55	55	—	110

### Band Leaders—C.W.

80 Metres: VK5JE					
Call	80/40	20	15	10	Total
2RA	—	—	—	—	55
3DQ	—	—	—	—	55
VK5NO	—	—	—	—	3320
2EO	—	—	—	—	2890
3DQ	—	—	—	—	2590
VK3TL	—	—	—	—	6100
3ARX	—	—	—	—	5640
2EO	—	—	—	—	5410
VK6RU	—	—	—	—	6405
2APK	—	—	—	—	3395
2RA	—	—	—	—	2700
VK2RA	—	—	—	—	525
5WO	—	—	—	—	160
2APK	—	—	—	—	155
All Bands: VK6RU	—	—	—	—	11660

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Call	80/40	20	15	10	Total
VK2AHT	745	4460	265	—	7470
2APK	—	1270	1665	—	2935
2AKF	—	1545	290	—	1835
2RA	—	995	—	—	995
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3HL	—	1800	—	—	1800
3BW Check	—	—	—	—	—
VK4LT	—	2985	830	—	3815
VK5CV	475	595	2765	—	3835
5FT	—	1105	—	—	1105
VK6RU	—	2400	1145	—	3545

### Band Leaders—Phone

80 Metres: Nil					
Call	80/40	20	15	10	Total
VK2AHT	—	—	—	—	745
5CV	—	—	—	—	475
VK2AHT	—	—	—	—	4460
4LT	—	—	—	—	2985
6RU	—	—	—	—	2400
VK5CV	—	—	—	—	2765
2AHT	—	—	—	—	2265
2APK	—	—	—	—	1665
Nil	—	—	—	—	—
All Bands: VK2AHT	—	—	—	—	7470

### RECEIVING—

WIA-L2033	—	—	—	—	1060
WIA-L3065	—	—	—	—	2205
BERS195	—	—	—	—	8195
(VK4) Lane	—	—	—	—	730
WIA-L6003	—	—	—	—	440
WIA-L6021	—	—	—	—	3215

## NEW ZEALAND

C.W.—					
Call	80/40	20	15	10	Total
ZLIAH	1960	7195	6400	1210	16765
1AJU	1510	7055	6395	1165	16125
1AMO	3035	7380	3015	1480	14910
ZL2AYJ	2335	5350	2745	—	10430
2AYT	—	4760	—	—	4760
2ADE	—	2795	—	—	2795
2LB Check	—	—	—	—	—
2GX Check	—	—	—	—	—
ZL4OP	—	2935	—	—	2935
80 Metres: ZLIAH	—	—	—	—	385
40 Metres: ZL2ADE	—	—	—	—	2795
1AMO	—	—	—	—	2650
2AYJ	—	—	—	—	2335

### Band Leaders—C.W.

80 Metres: ZLIAH					
Call	80/40	20	15	10	Total
2ADE	—	—	—	—	2795
2LB Check	—	—	—	—	—
2GX Check	—	—	—	—	—
ZL4OP	—	—	—	—	2935

20 Metres: ZLIAH	—	—	—	—	7380
1AH	—	—	—	—	7195
1AJU	—	—	—	—	7055

15 Metres: ZLIAH	—	—	—	—	6400
1AJU	—	—	—	—	6395
1AMO	—	—	—	—	3015

10 Metres: ZLIAH	—	—	—	—	1480
1AH	—	—	—	—	1210
1AJU	—	—	—	—	1165

All Bands: ZLIAH	—	—	—	—	16765
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### PHONE—

Call	80/40	20	15	10	Total
ZLIAIX	2015	7585	4840	700	15140
1KG	1380	7095	3805	1370	13650
1AGO	—	4810	—	—	4810
ZL2AAG	—	2480	—	—	2480
2GX	—	1980	—	—	1980
ZL3VI	—	1535	2045	—	3580

### Band Leaders—Phone

80 Metres: ZLIAIX					
Call	80/40	20	15	10	Total
ZL2AAG	—	—	—	—	2480
1AIX	—	—	—	—	1805
1KG	—	—	—	—	1380
20 Metres: ZLIAIX	—	—	—	—	7585
1KG	—	—	—	—	7095
1AGO	—	—	—	—	4810
15 Metres: ZLIAIX	—	—	—	—	4840
1KG	—	—	—	—	3805
3VI	—	—	—	—	2045
10 Metres: ZL1KG	—	—	—	—	1370
1AIX	—	—	—	—	700
All Bands: ZLIAIX	—	—	—	—	15140

### RECEIVING—

DX37A	—	—	—	—	10585
ZL282	—	—	—	—	1905

## OVERSEAS

### C.W.—

North America					
Call	80/40	20	15	10	Total
KIRTB	—	1122	—	—	8118 pts.
W1WY	—	98	—	—	5238
W1CA	—	68	—	—	798
W1OP	—	810	—	—	7680
W1WZ	—	248	—	—	196
W4AZK	—	1365	—	—	721
W4KXV	—	133	—	—	32
K4RAI	—	60	—	—	4008
W4TE	—	44	—	—	30
K5KBH	—	4758	—	—	6169
W5WZQ	—	4100	—	—	904
W5KQ	—	1890	—	—	196
W5BR	—	1854	—	—	16
W5PB	—	853	—	—	18
K5UYF	—	360	—	—	16
K5ZYF	—	72	—	—	—

South America					
Call	80/40	20	15	10	Total
HK7ZT	—	196	—	—	144 pts.
HK7YC	—	112	—	—	87
PY1ADA	—	190	—	—	6

Europe					
Call	80/40	20	15	10	Total
DJ2RE	—	406	—	—	420 pts.
DL2BK	—	353	—	—	88
DJ7CS	—	224	—	—	88
DJ7IK	—	168	—	—	156
DJ6LV	—	168	—	—	210
DJ6XP	—	168	—	—	312
DL6LV	—	144	—	—	156
DLAFT	—	40	—	—	120
DJ3VC	—	12	—	—	90
DL6FT	—	12	—	—	30
DJ2IW	—	2	—	—	24
F8IH	—	280	—	—	8
F8TM	—	2	—	—	8
P2SQ	—	2	—	—	8
G4CP	—	847	—	—	4
G5WE	—	819	—	—	4
G3AF	—	380	—	—	320
G3DYD	—	288	—	—	28
G3KSH	—	288	—	—	28
G3WP Check	—	—	—	—	1144
GW3JI	—	156	—	—	80

(Continued on Page 19)



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L237—I.F. Coupling Transformer  
L278—Sound I.F. Transformer  
L279—Ratio Detector Transformer  
L147—I.F. Coupling Transformer  
L149—I.F. Coupling Transformer  
L150—I.F. Video Trap Coil  
L151—2nd Video I.F. Transformer  
L152—1st Video I.F. Transformer  
L192—Video Trap Coil.

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# Correspondence

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

## TESTS ON 1296 Mc.

Editor "A.R." Dear Sir,  
The following is a description of some test on 1296 Mc. carried out during the week-end of 2nd to 4th March.  
On 2nd March VK2ZCF and VK2ZAC made a two-way contact on 1296 Mc. over a 1-mile path, using crystal controlled equipment at both ends. Time 1400 hours.  
Signals were 5 and 6 both ways and this contact was to check the compatibility of the two stations. To the best of my knowledge this is the first two-way contact of this type in Australia.  
On 4th March VK2ZCF transported his equipment to Mt. Bowen (near Kurraljunga Heights) and contact was established with VK2ZAC at Narwee (a Sydney suburb) over a 37-mile path. VK2ZCF's report at VK2ZAC was 5 and 8. VK2ZAC's report at VK2ZCF was 5 and 9. Time 1010 hours.  
Later VK2ZCF moved to Mt. Esmah and again made contact at 1330 hours over a 47-mile path. VK2ZCF's report at VK2ZAC was 4 and 5. VK2ZAC's report at VK2ZCF was 5 and 9. The reason for the poor report in one direction during the latter contact was due to lack of battery power at the portable station.  
I would like to submit this latter contact as an Australian record for this band.  
Description of the gear. VK2ZCF: transmitter, 8 Mc. crystal, 12BY7, 12BY7, 822, 2C39, 2C39-34, 72, 144, 144, 432, and 1296 Mc. Power input to last stage, 12 watts. Modulation, a.m. Receiver, crystal controlled converter using silicon diode mixer and 7 Mc. cascade i.f. amp. 6BQ7 into communication receiver. Local oscillator chain, 20 Mc. crystal 6U8, 6J6, 6J4, crystal diode frequency doubler. Antenna, 16 element phased array, coax. fed.  
VK2ZAC: transmitter, 8 Mc. crystal, 5Y63, 5Y63, 6Q6/12, 2C39, 2C39-34, 45, 144, 144, 432, and 1296 Mc. Power input to last stage, 12 watts. Modulation, a.m. Receiver, crystal controlled converter using silicon diode mixer and 14 Mc. series cascade i.f. amp. 6ES8 into BC342 receiver. Local oscillator chain, 11870.3 Kc. crystal 6U8, 6AK5, 6AK5, crystal diode tripler. Antenna, 32 element phased array up 32 ft. feedline 50 ohm coax.  
Independent observers who witnessed these tests were VK2ZDE and VK2ZED.  
—W. R. Cox, VK2ZAC.

## 50 Mc. AWARD FOR S.W.L's.

Editor "A.R." Dear Sir,  
Re your query if any s.w.l. has received QSLs from all VK stations on 50 Mc.  
I have received QSLs from VK2RS, VK3ZAT, VK4ZBM, VK5ZEB, VK6WG, VK7ZAL, VK8AV, VK9XK. If there is an award available to s.w.l. would like to have information and cost, etc. Will send QSLs and list.  
I also have QSLs for 50 Mc. from ZL1, 2, 3, JAI, 2, 3, 4, 5, 6, 8, 0; VK2CG, KH5UK, K6ERG, and KA2PFW.  
Hoping to have something re the award soon. 73.  
—Charles H. Thorpe, WIA-14018.

## A LINEAR AMPLIFIER FOR 50 Mc.

(Continued from Page 3)



R.I.'s despair or a slight case of t.v.i.

Severe non-linearity due to instability, parasitic or t.p.t.g. oscillation on peaks. Waveform bears little relation to correct one. Amount of intelligent information conveyed negligible. Drastic action called for.

## Europe (Continued)

OH1TN	612	pts.	SM3EP	210	pts.
OH1W	548		SM3ZFW	188	
OH2EW	548		SM3CCE	180	
OH2PT	145		SM5LL	1116	
OH2NS	80		SM5BEU	416	
OH1WE	2		SM5BFE	30	
OH1VA	2		SM5BDF	24	
PA0ADP	233		SM5CFU	24	
PA0LOU	400		SM5CFU	24	
SP1KJ	400		SM5VY	70	
SP1THX	100		SM6ARH	32	
SP1HL	8		SM7CAB	156	

## South America

LU1DAB	144	pts.	YV5AKP	233	pts.
YV5AQS	830		YV5AHG	217	
DL9KRA	816	pts.	OH2AA	730	pts.
DJ2UU	132		OK1MP	14	
DL6DF	4		OK2HAU	2	
DL15F	1		ON4LX	24	
E1SP	52		SM3BIZ	572	
GP5O	2970		SM5LL	224	
GA1P	105		SM5CQ	140	
OE1RZ	576		SM5BG	18	
OE1ME	574		SM7CAB	24	

## U.S.S.R.

UR2AR	42	pts.	UM8KAB	36	pts.
UP2NV	16				

## Asia

JA1BWA	2261	pts.	JA4EE	2	pts.
JA1BU1	384		JA5AHI	20	
JA1EHA	8		JA6PY	477	
JA1GSG	8		JA7CK	105	
JA1AJA	8		JA8BY	12	
JA1TZ	2		JA9UU	21	
JA2ANX	2232		JA9AC	180	
JA3BG	126		9M2DQ	2246	
JA3BEA	84		KR9G	1005	
JA3CUB	40		KR9J	539	
JA4AQR	168				

## Oceania

FK8AK	302	pts.	KG6ABJ	2618	pts.
KC8BK	1230		VR30	4100	
KH6EVT	235		ZK1AR	3278	

## RECEIVING—

## Europe

A2114	672	pts.	HA5-036	108	pts.
A2340	288		OK3-8285	240	
A2946	284		DL8288	578	
BR52463	160		D-A-A-016	Check	
HA3-007	208		OK-1054	408	
HA3-708	154		SM5-D61	12	
K2-7079	70	pts.	VE3-9301	353	

## North America

--	--	--	--	--	--

## ARTIFICIAL LEG ANTENNA

During 10 days operation of ZD6JO (by ZE3JO/ZE3JJ) last October, ZE3JO often used his artificial leg as an antenna for contacts, not only local but also with stations as far afield as Belgium and Germany.

Early 1963, with his home station, he QSOed a VK5 using the "artificial leg antenna."

—BERS195.

## PHONE—

K3GX1	204	pts.	K5EVR	2044	pts.
W2W7	30		K5ERY	424	
W4RLS	220		WA85BO	228	
W4BVV	184		K4A1H	85	
K5MDX	425		W5QJ	Check	
K3KBH	2208		W5ESK	3960	
K5UYF	80		K5ECB	208	
W5KC	108		KP4CL	224	

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Sub Editor: LEN POYNTER, VK3ZGP.

14 Esther Court, Fawkner, N.15, Victoria

ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

# W.F.E.

Before commencing these Notes, I would like to thank Bill Roper for his past work and hope I can measure up to his standard. All Divisional Correspondents, please forward reports to the address above—not later than the first of the month please! I would like to impress on each one that this page is the only information many have of v.h.f. activity and with your help I would like to give a real picture of activity in your State. Most Divisions have newsletters, but overall this page is for v.h.f. Listeners! Where are you? Why not send me your reports on band conditions—what you hear, etc. The greater the range the greater the service we can render.

In VK3 there is becoming available quantities of surplus radio-telephones—low band 70-89 Mc. a.m. and these are finding their way into Amateur hands. Most are aware of the f.m. carphone net here in VK3 on 2 mX, well a move is being made here to establish a net on 6 mX for the a.m. carphones. At the March meeting of the VK3 V.h.f. Group, a motion was passed requesting that \$3.00, \$3.20 Mc. be reserved for fixed frequency equipment and a committee has been set up to pursue this matter. This equipment will be used by members in other States usually and now is the time to get together and form an Australia-wide net—a common frequency—mostly without co-channel interference and have a reasonable chance of a QSO. It will be almost as good as a beacon because a caller VK3 could produce a reply from VK4, etc. We hope all Divisions will consider this suggestion when it is put officially. Think it over in the future!

**Interstate Co-operation.** Unlike F.E. all the V.h.f. Groups are rather loosely held together on a nation-wide basis. Because v.h.f. is becoming more than a local band and activity is increasing in other States, it is time that the Groups in particular find some way of keeping close together in the way of exchange of ideas, information, etc. Coordination of field days is a point we could well commence with—how about trying if each Group were to appoint a correspondent to keep in touch with each other Group. A greater degree of co-operation could be achieved.

If you are all wondering what happened to the special v.h.f. issue of "A.R." last year, I will unfortunately be unable to give the reason. I failed to eventuate. Those who did send material, my sincere thanks. Perhaps we will try again in the future! I still say we can do it! 73, Len SZGP.

## NEW SOUTH WALES

144 Mc.: The March fox hunt finished at Brighton-Le-Sands where the fox had his tides back to front and the antenna was not on the edge of the beach but some 6 feet into the sand! This is a well known low frequency area and some of the reports on the activity are unprintable. The winner was David SZWV and Dave 2AWZ and then Paul SZZJ. Dave actually arrived on the scene earlier but decided that no one would put an antenna in Botany Bay.

Activity on the band is only light. Received a letter from Mac ZZMO with some Newcastle news. Unfortunately Mac has had t.v.l. problems and is unable to receive any signals running a pair of 2226s with about 20w. input. Regulars include 2ZKW East Maitland, 2ZSQ 2ZFY Maitland, 2XT, 2ZIF, 2RJ, and 2AVL.

1296 Mc.: Further to Bill's (ZZAC) effort of his DX with Dick ZZCF, Bill has come up with an interesting idea. He has mounted a reflector screen 36 x 42 inches at the top of his mast inclined at 45 degrees and the antenna mounted at right angles to the screen. This has the advantage of reducing his lead in length from 60 ft. to 6 ft. and gives at least double the radiated power.

Bill has also been finding out some varactors and finds that multiplying from 160 to 500 Mc. with 15 watts drive he can obtain 12 watts with 10 watts drive. He has mentioned multiplying five times to 800 Mc., he can get 7w. out. It becomes obvious that varactors are the answer to u.h.f. man's prayer. Bill suggested that for anyone who is thinking of coming on to 1296 Mc. that they try to come out at 1296.1 Mc. plus or minus 50 kc., which will facilitate finding stations. 73, ZLLB.

## SOUTH AUSTRALIA

50 Mc.: Considering the large number of new stations that have been mentioned in these notes over the past three months, activity is very poor. The only DX for March was an opening to VK4 on 11th and another opening to VK4 and VK2 on the 12th. Signals were quite good on both occasions, however only a limited number of stations seemed to be active.

50 Mc.: At Crystal Brook is now on 50 Mc. using an 815. Col 5RO reports working 3AOS occasionally on tropo (distance about 270m.). 3AOS was previously 3ZFM and is probably better known under his old call.

144 Mc.: Very good news in this band is the fact that Gary, the son of Herb SNN, now has a Limited Licence. Herb has been greatly missed on 6 and 2 mX over the past few months and we hope Gary will be able to find time to keep activity on Yanac going. SKM in Victor Harbor (50 miles south) is on 144.3 Mc. and has been working into Adelaide as well as working Hughie SLE at Renmark. Our friend at Victor Harbor is using a 24 element phased array and 60w. to a 6/40.

144 Mc.: An old timer who has recently made a re-appearance on 144 Mc. is SLE at Galga (150 miles east of Adelaide). SLE is not very far from the group but has been out of the Western Victoria chaps. Colin 5RO is one VK5 who has worked SLE recently. Keith SZMK at Waseley reports working the Mt. Gambier fellows regularly on 144 Mc. Signals worked include SCJ and SZGR, this is a haul of about 280 miles. We understand that 3ASW (Western Victoria) will be coming back to 144 soon (freq. unknown). Shep 5DC has been on 2 mX recently with an excellent signal. Shep is believed to be using a Gonset "Communist" eator. The 5ZBDC VK5 is still doing Adelaide stations with reasonable success.

**General News:** The annual picnic was held at Mt. Barker (1600 ft.) on 21st March. About 40 stations attended in 15 cars and 14 cars were fitted with mobile. Unhappily, the eating of chips took preference over working long and good results were obtained. A couple of days later, however we are assured that a good time was had by all. Barry 5BQ was airing his recently acquired vehicle, which met with the unanimous approval of all members.

Gary SZK, after spending many weeks constructing a quad for the low frequency bands, erected it recently to have the whole thing demolished the following couple of days later. This was bad luck, but Gary informs me that the damage was mainly superficial and that he hopes to have the quad back up soon.

After a full over the past 16 months or so activity on 288 Mc. is understood to be at quite a high level. Vic 5JH on a recent portable 40w. rig worked 22 different stations in this band.

Pending the arrival of Doug 8KK back in Adelaide, the band is being kept busy. Doug has been handled for the past couple of months by Brian SZBR. Doug is our newly elected v.h.f. group chairman and is expected home in April. Al SZCR.

## WESTERN AUSTRALIA

**February Meeting:** A good attendance was noted and Laurie 6ZC from Darwin and Les 6CL from Carnarvon were present. Good to see you boys from the country. We hope more of you will be dropping in soon.

**Fee Hunt:** The hidden tx run by Lance 6LR posed some problems, not only the tx but the signal and tone were also hidden. What happened Lance? Did you consider how hard we've been getting it too easily? The result was worked out on a time mileage basis and Tony 6ZDT with Ray 6ZC won the second prize as the winner. Tony 6ZDT promises to have a real poster for next month.

**Full Calls:** We have been advised that Cedric (4uz8BZC) and Bill 6ZDC's full call is not known yet, it has been assumed that we are not losing them from the v.h.f. bands.

50 Mc.: S.a.b. is in the news again. John John 6ZAG has his working and Tom 6ZCA is using d.a.b. but almost has a s.a.b. rig completed.

It has been heard on the grape vine that a 6 mX mobile force is reaching maturity in Geraldton. Brian 6VU, Bruce 6RR, Noel 6MF and Ted 6WH are in the throes of construction and before long should be making their presence felt. This activity is very heartening after the successes by Bob 6BE and Brian 6VU on the Perth Geraldton path, as there should be more signals from the north next year.

Mike 6ZCX has unleashed his new secret weapon, 55w, to an 815 and making himself heard by all and sundry. Ken 6ZBT is reported to be hibernating this year as university is interfering with his Amateur activities. As he was one of the regular gang, he is sure to be missed. Colin 6ZCI will most probably be finding the same trouble, but we hope to hear the boys when study permits.

144 Mc.: Neil 6ZDK has just completed a very nice home station-cum-portable 144 Mc. unit, using a Geloos v.f.o. This unit has in-built switching for 6 or 12v. heaters. After running out drive problems to the 522A by investing in a new 12A7T, Neil believes as I do he has quite a potential signal source. Mac 6ZDQ in anticipation of a posting back to Laverton to complete his radio training, is building up 144 Mc. Watch for him in VK3 before the year is out.

676 Mc.: Further reports on Rod 6ZDS and Charles 6LK's 37-mile effort on this band is that signals were 5/9 each way and all gear is xtal locked. They are now looking for two mountaineers or hills approach, others who believe they can set up a really worthwhile record. Anybody having two such hills will need to be on the 676 Mt. Look, but should pay freight on some before shipping them to the boys.

To all owners of those pencil type mikes with the slide switch on top. One of our local boys would like to compare notes with others who have been caught. He gave a wonderful discourse the other night approx. 25 minutes on a certain subject only to be told when he went over he had no modulation! His switch is now taped on. 73, Allyn 6ZDM.

## PAPUA

50 Mc.: On 23rd March the band opened most surprisingly to Brisbane from 1700-1830 hours. Only two stations heard and contacted were 424X and 424Y. The latter was on 58-9 for most of the opening, so presumably no other Brisbane stations were operating at the time. This is the first time that an opening has been observed to VK in March. No sign of a JA opening so far, this appears to be running late as JAs have been worked in March in previous years. Scatter stations on 49.8 and 49.9 Mc. were noticed on six nights at the end of the month. 49.8 Mc. bearing the best signals, the best being having 60w. over 59 for several hours on the night of 27th. 49.9 Mc. signals bearing N.W. reached 59 on four occasions.

1296 Mc.: No activity during the month. No v.t.v. signals were observed in March. 73, 9AU.

## W.P.X.

(as at 1st April, 1963)

### C.W.

VK3XB	... 411	VK3XC	... 295
VK3KB	... 400	VK3NQ	... 317
VK3KX	... 412	VK3V	... 318
VK3AS	... 391	VK3RJ	... 313
VK3APK	... 346	VK3ARX	... 310
VK3NO	... 327	VK4TY	... 298

### PHONE (A.M.)

VK6RU	421	VK6KW	... 303
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Urb WDEEC, DX Editor "CQ", states the following in relation to W.P.X. tailing: "When a prefix for a geographic (or geographic) area is used, the prefix may be claimed but not both. An example of this would be ZDZ and 572. Also prefixes do not concern themselves with countries, but only with areas. In VU2MD, while being two different countries, count only as VU2 for prefix purposes. When a prefix is no longer authorised for use it may not be counted, such as FF8, FQ8, etc."





Our third S.W.I. Convention will be over by the time you read this. This is one week-end of the year when we have a chance to get acquainted with our fellow members. A report of the Convention will be given in next issue of "A.R."

It is pleasing to see so many of you joining contacts these days. For undoubtedly many of you will be the Amateurs of tomorrow. We will give you all the encouragement that we can and do not need to be frightened to ask any questions you may have on your mind.

We would like to see more of you in the Contests that are run. Apart from the R.D. Contest, very little support is given to the other Contests which are run. All the Contests that are run by the W.I.A. do have a receiving section. So how about it—give it some thought.

#### NEW SOUTH WALES

Chas. L2111 has the distinction of being the first S.W.I. to have received the 2L, 2B, 2D award, which is confirmation of having QSLs from all 2L call districts on 50 Mc. Congrats., Chas., that is indeed a very fine effort. Chas. has received the following awards: 1960 R.D., 1961 R.D., 1962 R.D., Ross Hull awards for years 60-61 and 61-62, the Elizabeth award for 62 and 63. That certainly is a good record Chas., and it will certainly take some beating. Chas. has reported six orbits of Oscar II, that he heard last year.

Don L2022 reports that it has been too hot of recent months to spend much time in the shack. However Don has had the occasional listen. And despite a number of reasons, Don is hoping for a good year on the bands.

Yes Don, the Ladder seems to remain much the same. However the Cox award is going to cause some changes for one, and I can see a few more changes before long.

#### VICTORIA

Fifteen members were present at the March meeting. Main discussion of the evening concerned our S.W.I. Convention at Ballarat. We were pleased to welcome three new members at the meeting. They were Peter Gibson from Dandenong, John Torrington from Pascoe Vale, and John (sorry John I have forgotten your name) from Melbourne. We all enjoyed and look forward to seeing you at our meetings in the future.

Our President, who was not present at this meeting and as Noel was unable to act as chairman for the evening, your scribe took the chair. Ian reported that the ART that the VK43 Control recently made available to us was now undergoing repairs. At the conclusion of the meeting we retired to inspect 3W1, per courtesy of Ken SACS. We finally rounded off the evening and dispersed to our respective QTHs.

In reply to the Editor re the 50 Mc. award for hearing all States, your scribe has been lucky enough to have verified all States.

Michael L1313 comes forth with a very interesting letter. At the moment he is using a 108 set having just recently constructed a power supply for it. Aerial is a half wave long wire 40 ft. high. The antenna is consisting of a 108 set, a 40 ft. high, superregain set. He tending his set to his YL who is becoming interested in Amateur Radio. Many thanks to Michael and look forward to hearing from you again.

Eric L3042 gained first place in the VK-ZL Contest with a total of 80 points. Congratulations to Eric on a very good effort. However he is becoming the fact that the Contest receives such poor support from VK S.W.I's. Yes Eric, it is true, but we are not as poor as we are so poorly supported by our members. So how about it chaps, give some of these Contests a go.

Our congratulations go to Jeff L3075 for having received his full call which is 3AQL. We hope that even though you have your shack at the end of the road you at some of our meetings in the future.

Your scribe has been busy brushing up on c.w. of reports all the same. Must keep in front of this Cox man. And that is going to take some effort.

Greg L2113 who is one of our newcomers, has sent out 250 reports this year. That is certainly good going Greg, let's hope that you get a good result for the year. Let's hope to erect a beam in the near future. Then there

will be no holding you Greg. Bob Hovey, another newcomer, and whom we welcome to the club, sends along a very interesting photograph of his rig. Thanks very much Bob, you certainly have a very nice set up. We hope that we will see your name on the DX Ladder before long.

Noel L3101 comes forth with another very interesting letter telling of his activities. Recently he had a visit from Peter Saunders L5032. Peter is in the Navy and is stationed at Flinders Naval Base and comes up to Sunshine at week-ends. While at Noel's place he had a good time over the bands. If you can ever make it to one of our meetings Peter we will be very pleased to see you.

At present Noel is on the bands nearly every night at 9.00. He is 2000 ft. MSL, dead end of a night he goes to either 3.5 or 7 Mc. for a while. The other day Noel received a very nice letter from Richard Mills, who is a Ken S.W.I. and he lives in New York. Noel is keen to correspond with S.W.I's in VK. Richard is 15 years of age and he is going for his novice ticket very soon. His address is 418 East 9th St., New York, N.Y., U.S.A. So I hope that some of you may care to drop him a line. I for one have written to him.

#### QUEENSLAND

Ross L2233/VK4 comes to the party this month with a note telling of his activities. Very pleased to hear from Ross. He recently burned his fingers with ZLs, DLs, JAs, XZs and PKs. He has a small rhombic on 10 Mc. and the QTH is 1400 ft. above sea level. Ross is keen to obtain a W call book—around the years of 1954-55. Any takers. We

look forward to having you with us Ross these more. Ross was in VK3 about six months ago.

#### WESTERN AUSTRALIA

Peter L2021 continues to keep VK6 on the map as regards S.W.I. activities in that State. At present Peter is heading a lot of DX on 7 Mc. c.w. and has received cards from the following: G18TK, K8ENX, JA1EPE, UG6AW, ZL4JZ and VSPIC. You will certainly do well Peter with the DX. He recently received a number of awards that he has won in a number of contests. These include two R.D. Contest awards, a K.F. award and a VK-ZL award. Nice work Peter old boy.

Peter continues to climb the DX Ladder and is very keen to catch up to Maurice. The way you are going, you will soon be up to him. Thank you for all the dope that you sent over. Peter may visit VK3 later in the year. We hope he will be pleased to see you and to call it. See you at next month, 73, Mac Hilliard.

#### DX LADDER

	Contest	Zns.	S.b.	W
E. Trebilcock	277	4	50	
D. Granley	112	257	38	20 101 35
A. Westcott	86	159	31	9 107 11
M. Hilliard	71	223	33	18 140 11
M. Cox	68	155	33	18 149 18
P. Drew	54	195	25	21 112 9
C. Abernethy	47	95	28	— 14
R. Ross	40	120	28	2 100
D. Coggin	9	86	6	2 35 12
G. Earl	4	70	4	1 33 —

## YOUTH RADIO CLUBS

Some good news from VK3 this month! JFL is going to handle Y.R.C. affairs in Victoria. With Divisional backing for him, there could be great expansion in that State. Congrats. to Morwell High School on having a Y.R.C.—they want to start on every Thursday from 4 to 5 p.m. on 3.65 Mc.

To be constructive, I should say something about the support at this level. I have great respect for those who put some of their valuable spare time into Division administration, so I don't suggest they take on an extra load in actually looking after a Y.R.C. Divisional backing for the Y.R.C. co-ordinator should include as many other forms of support as possible. This could be in the form of advice and facilities. Typing and duplicating assistance should be paid for or sought. Appeals for donations of equipment can be made through bulletins and broadcast. A negotiator should approach the Education Department for official approval, summer schools, finance, publication of information, and so on. Wide search should be made for some who would build simple models to help Y.R.C. leaders. Suitable disposable aids could be passed on to a Y.R.C. The authority of the Division should be used to approach branches of Rotary, Apex, Lions, J.C., etc. A Divisional letter to all manufacturers, distributors and repairers of electronic equipment could gather some of the tons of useless "rubbish" which they destroy regularly.

The April "A.R." Federal Convention, Novice licence should be carefully read by all Amateurs interested in their frequencies and supported by all Divisions. The urgently needed expansion in our numbers is only likely to come from recruiting the young ones. Specially note that this rapid growth among the young ones is only possible if we encourage them directly encouraged their youth with opportunities, through a restricted licence, to experience the excitement of operating a transmitter. The stated aim of the Y.R.C. is to ensure the safety of youths operating a receiver and 10w. transmitter is made to look ridiculous by the expansion in our numbers. Only likely to be by the competence and technical knowledge of hundreds of boys I have personally seen in the 12-18 age group. They are nearly always far safer than most of the adults.

An item from VK4. Father A. Yields, Club Leader at Sacred Heart College, Toowoomba, has been successful for the year certificate examination. This is the first batch of can-

didates from VK4 and results are awaited with interest.

Various moves are under way with regard to Boy Scouts' Association and Australia Air League. No details are available yet but note that Rover Scouts have a Project Badge which involves six months' study in some field of interest. Amateurs should contact their locals and suggest a similar project. It is a very worthy object in itself, but could lead to further development of Scout Radio Clubs with their own Amateur Stations, and opens up wide possibilities for inter-group communication, not to mention field days.

Much activity in VK3, as usual. Recent new clubs are Narwee Boys High and Sydney Tech High. At Narwee, the science master, Mr. W. Sites, is leader and instructor. Formation of the High Club is due to the energy of Ian Burns who transferred from Rex Black's club at Kingsgrove High (2AVV). On Saturday, 30th March, at Narwee Boys' High, Pete, Rex (2YA) operated a base station and 2RX and 2ABA worked mobile—a fine talking point for fete visitors.

Doug Williamson, a teacher at Bass Hill H.S., is now to handle all Elementary Certificate matters—that is a great help for you, Rex. A new Boy Scout Radio Club is on the way in Auburn with Jim 2AMQ as instructor. An AT5 to back from the estate of the late JIP has been reserved for their station. Tony Shannon, S.W.I. is now a club leader at St. Leo's College, Wahroonga, is now teaching at St. Leo's Academy (England), but no youth radio club yet! Many thanks to Reg 2ZMR for his donation of a Philips No. 44 and a No. 11 transistor to the Youth Radio scheme, probably for use at Narwee and Sefton High Schools. We can now start to get a gear up, up as far as slightly used KWM2s! Two good Junior Certificates and one Elementary at Patrician Brothers' School, Liverpool. Dick Harnett, of 2YFC is one of a group of instructors. Club station is 2KL, usually on the air on Saturday afternoons. Roger 2AIU at Inverell High School reports good progress and a good group sitting for certificates.

That's all for now—but where is the news from the Divisions in VK4, 5 and 6? Can they read try to find a group of instructors? Club co-ordinator and then support him? Slightly (very slightly!) sorry to be persistent, but this is important. Write to us.

73, de Ken IKM.





# FEDERAL AND DISTRICTAL MONTHLY NEWS REPORTS

(SEND CORRESPONDENCE DIRECT TO DIVISIONAL REPORTER NAMED AT PARA. END)

## FEDERAL QSL BUREAU

The R.S.G.B. QSL Bureau will be closed between 23rd May and 10th June. They request no despatches to arrive during this period.

The Association of Amateur Radio of Morocco is sponsoring a Contest to be held during the Cassinade Festival, which will be held between 25th April and 11th May. The Association will have an official station on the air daily from the Fair under the call sign CNMCM. This station will transmit alternately on 7 Mc. 1400/1600z and on 14 Mc. 1600/2200z.

The QSL Bureau of the International Short Wave League (I.S.W.L.) has changed its address to 7 Parkside Gardens, East Barnet, Herts, England. G3LFF continues to be QSL Manager.

G3MTB, Beccy Parish, of 2a Pasture Road, Barton on Humber, Lincoln, complains of no receipt of QSLs from the following VK stations: VK3OZ (1958), VK3AQL (1959, two QSOs), VK3AJZ (1960, three QSOs), VK3ASA (1960) and VK3RX (1960). He has not yet received one VK card.

In the QSL year ended February 1963, this Bureau handled 47,578 cards as against 44,339 the previous year and 43,824 the year before. This was the heaviest year since 1950. Despite the increased handling, costs remained substantially unchanged.

Ray Jones, VK3RJ, Manager.

## NEW SOUTH WALES

The Annual General Meeting was held at Wireless Institute Centre on Friday, 22nd March over 100 members being present. The meeting was opened by the President, Max ZMP and the minutes of the last Annual Meeting were accepted by the Council.

Barry Cartwright, acting for our Auditor (Jim ZPM, who is overseas), then read and presented the Auditor's report and balance sheet. The meeting then turned to the vote of thanks to Jim and his staff for the good work in preparing and presenting the Auditor's report and balance sheet. Jim ZPM was then re-elected Auditor for 1963.

During the discussion on the balance sheet, Warwick Johnston supervised the ballot for the election of Council and the following were declared elected:

John Birdall, 2QJ; Vic Cole, 2VL; Kev Collins, 2ANY; Roy Pearson, 2KO; Gerry Sabin, 2AGS; Sid Ward, 2W; Webster, 2EW. Pierce Healy, 2AFO, Federal Councillor, then reported on the final arrangements for the coming Easter Federal Convention.

The general monthly meeting was held on Friday, 22nd March, and the lecture for the evening was "V.h.f. Radio and Its Use in Upper Atmosphere Research" by the U.S. G.I.-G.I. station at Camden. Les gave an interesting talk on the use of radio in measuring various phenomena in the ionosphere and making the multitude of Sputniks that are flying around in space. An interesting part was the use of satellite transmissions, theirs and ours, to observe variations in the ionosphere and to find a good labour saving device.

The first Council meeting for 1963 was held at Wireless Institute centre on Thursday, 26th March and the members turned up to see the new Council off to a good start.

The following officers were elected: President, Vic Cole, 2VL; Senior Vice-Pres., John Birdall, 2QJ; Junior Vice-Pres., Gerry Sabin, 2AGS; Joint Secretary, Bill Stross, 2EG; Minute Secretary, Kev Collins, 2ANY; Communications Officer, Roy Pearson, 2KO; Education Officer, John Birdall, 2QJ; Publicity Officer, Frank Hine, 2QJ; Publications Officer, Gerry Sabin, 2AGS; Bulletin Editors, Gerry Sabin, 2AGS, and Warwick Johnston, 2W; Treasurer, Charlie Goss, 2W; 2WR; QSL Officer, Frank Hine, 2QJ; Liaison Officer, Frank Pearson, 2ACQ; Disposals Committee: Dr. K. King, 2ABK, Vol. Moleworth, 2VO, Ken Squires, 2SP; Youth Training Scheme Committee: Chairman, Harold Burfoot, 2AAH, Supervisor, Rex Black, 2YA, Liaison Officer, John Birdall, 2QJ.

On behalf of the Council I would like to thank the members of the W.I.A. for their support and hope that 1963 will be a bigger and better year for the Institute. 73, 2VL.

## HUNTER BRANCH

Contrary to expectations, the March meeting of the Branch was not the rowdy affair that had been predicted. Other than occasional shout of "Shame" and "What about a secret ballot?" things were very quiet. So quiet indeed that the one who doesn't even know that he'd been elected until he heard his name read out with the others at the Sunday morning broadcast! Vic ZVL, our new Divisional President, conducted the election which suited as follows:-

Les ZRJ, President; Lionel ZCS, Vice-Pres.; Keith 2AKX, Junior Vice-Pres.; Bill ZXT, Hon. Treasurer; Gordon ZSSG, Hon. Secretary; Keith 2AKX, Zone Correspondent; John ZZJC, Social Sec.; Kev Z2KW, Social Treasurer; Stan ZAL, ZSL Officer; Stuart ZAYP, V.h.f. Liaison Officer. Stuart ZAYP gave a very full report of the year's activities in his position as retiring President and Les ZRJ gave a short speech saying he hoped attendance would be better than that of Stuart's report will be published in full in the Bulletin.

Because the coincidence of Easter with the meeting week-end in April, it was necessary to put forward by one week the meeting night. Since there is no reason why this should not be regular thing, it was unanimously decided by members present at the April meeting that as from May, 1963, monthly meetings shall be held on the first Friday of each month, excepting January when no meeting is held. This also means that copy of the proceedings of the meeting will be available to be published in the following month.

The April meeting also set a record for attendance, and looking through the records, I find it is over ten years since there has been such a high attendance at a monthly meeting. Forty-eight were present, including twenty-six licensed Amateurs, to hear seven lecturers describe gear that they had built. Those taking part in the Do It Yourself contest were: Bob Z2WM-Amateur-band converter, Bob Z2W-two metre converter, Kev Z2KW-tuneable two metre converter, on the 2nd receiver for Amateur bands, Don Z2DN-two metre transceiver for mobile, Les ZRJ-a two metre yagi, and Keith 2AKX-transistor phase shift osc.

Several duplicated sheets were distributed during the evening and the challenge was filled several times with diagrams and the like so that all attending went away with many new ideas.

Lucky Lionel, as he is known, is going away for a seven-month world tour at the end of the month and members want to be sure that he takes lots of colour pictures to show us on his return. Big Ben, one of us all, presented him with a large transparency storage box in which to keep the pictures. Good luck, Lionel, but don't forget to buy lots of film!

One of our April meeting lecturers, Bob Z2Y, is active on both 144 and 7 Mc. and I heard ZWL giving him a 5 and 9 report. Bob has converted with a broad handle on it and those who were at the meeting will have seen the strange machine, but to most it still remains a mystery. Kev Z2KW is making even the mystery on the Phillips No. 4 TX and his now famous tuneable converter. While in the wilds of Maitland it is pleasing to note that Vic 2AKX is recovering from his recent illness and may soon be back on the air with greater vigour than ever. Bob Z2QR has returned from holidays at his country seat and has been back on the air some time. One of the chaps at the meeting told him he was losing weight and Bob was quite put out—no wonder there was a shortage of chairs.

It was good to see Neil Z2CU back on deck again after his recent absence. There is a rumour that he has a 2 metre rig in one of his crutches and that could account for his care in staying there, but I don't know for sure. So let's hear you on the air soon Neil. I am very hurt to know that I have been wrongly reported that Harold 2AHA has been in the States for a long time. In fact they are on 1410 and putting in a massive signal to all locations in the Branch area. I will probably be back on the air again on Monday nights again when the law about the alcohobes becomes law. Because, you see, he'll be working between 6.30 and 7.30 and the DX will have to wait. He has been

amongst some rare ones lately and the new rig is really worth the money. He says, "If you are one of those rich types like Stuart ZAYP then you will have installed a t.v. set as a monitor for your 80 meg contacts. Or worse if it happens to be the home t.v. set and the XVL is watching a programme that's a different matter. I believe Mrs. ZAYP still feels that nasty man who wrecks all the programmes."

The Hon. Member for Stockton, Ron ZASJ, and his partner in earbashing, Jack, are still hard at it on both 7 Mc. and 144 Mc. on Tuesday afternoons before to avoid trespassing on Indian territory. Ern ZPF has been very busy with hammer and nails and the result is—yes you've guessed—a new shack. Doctor Bill, or Z2K to you other people, is a real live doctor now since that ceremony held at the University recently and he has been having some trouble with modulation—whether as a cause or an effect no one is sure, but one thing is certain, he's not forgotten the sign language developed by Samuel from the U.S.A.

Each night I pass Bill Z2L's place I see a light in the shack but I seldom hear the signals. This is because Bill is working on his "Do It Yourself Flood Rescue Kit" which is a very useful thing to have in the garden. Following the recent wet weather things were very damp at Phenyl Bay and little work was done. The signals were somewhat rubbish recently purchased by Chris' lads. Still there's a reason for this—Sherwood has become such a menace in the firm's trucks that they've had to persuade him to go instead of drive. And to think that his explanation to the officer of the law as, "That's the way it is, I'm not responsible for his left!" Chris himself is trying hard to explain the article seen in a 1948 copy of "A.R." which told of that gentleman shortly to become a doctor. Well, that was then and this is 1963 and I'll leave you, kind reader, to think what you will. No, he isn't.

It appears that Rodney ZCN was glad to get back home after his recent trip to the south eastern States. It was because he was anxious to screen the 600 feet of colour film taken on the trip and to read all the radio he had brought. One of them told him how to build a 2 mx long term and so now he has one—10 elements long. Gordon was unable to rebroadcast the news on Z2SC the Tuesday night when he was away. The trouble apparently stemmed from having a noised too much on the coupling capacitor. I don't mean of 100 pF, but he realised before that nothing could be so important. Harry Z2FA is being stirred into activity by the article on the 10w. It recently appeared in description of the 10w. He may hear him on soon. If he doesn't hurry up his grandson Stephen will beat him there.

Nobody has yet claimed Belmont Bob's grey box, so he has withdrawn it from sale. He has lots of specialists on the column now—yes you just ask them. At last Allan Legge has been persuaded to attend a meeting and even got the Council to agree to help along. There's a new super building project in hand for a lakeside Amateur which could mean a benefit for all—the secret, no I'm not saying it, but it will be a very nice place, from Marmong. They are all going to build transistor oscillators now that the junior member has shanked the Council with a 200-watt WRO with 200-milliwatts, and says the beam is the reason for the signal strength. "If the t.v. stations can do so, I can," says the Council. But I don't know if it will be 12 watts but if you'd like to hear the melodious tones of the two Monday night announcers then tune in 200 p.m. on 7 p.m. and there you'll be the broadcast.

And please don't forget the next meeting will be on the first Friday of May—that's the 3rd, at the Newcastle University College, Tighes Hill. What about making it another regular one you were, 73, 2AKX.

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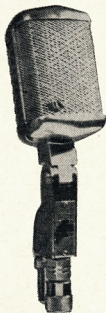
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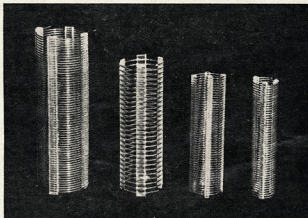
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4-08	1"	8	3"	No. 3014	8/5
4-16	1"	16	3"	No. 3015	8/5
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considerably. The attendance at monthly meetings seems to be rising too, at average of 35 or so members at each meeting!

The attractions as scheduled in our "Program of Events" for the next month include: May 3, visit by S.W.I. Group W.I.A. and club night on the air; May 17, general meeting, lecture on United Nations; May 25, social at 3200; June 7, 80 is hot.

The club net on 3.6 Mc. every Monday night from 2000 hrs. still attracts many members as well as non-member stations. Any Amateur Station is welcome to join this net and a few have taken the opportunity of obtaining contacts through this medium for the Honorary Membership Certificate. Any VK station applying for this Certificate needs 14 member contacts.

As well as 5.6 Mc., many members are equipped with 145 Mc. f.m., and I list those who at present are active: Fixed base stations—30T, 3N2; fixed as well as mobile—3EM, 3DF, 3KE, 3CW, 3ZCB, 3ZOO; mobile—3AB, 3AD, 3LC, 3AHZ, 3AKB, 3ACS, 3XK, 3XV, 3ZOT.

At our last general meeting a committee of four members, namely Kevin 2BDE, Al 2BC, Wally 3AHZ and Bob 3ZRD, was chosen to act as a "publicity committee," so from now on you may note different styles of Journalism, but 73, 3LC.

## QUEENSLAND

What's wrong with all you Queenslanders. Can't get on to any scandal, no matter how carefully I tune the various bands. And as for my spies, I'll tell you what, I'll approach the VK4 Council for an increase in your wages.

I'm not even sure whether these notes will reach Melbourne in time for printing. As mentioned in last issue of "A.R.", everything is BIG up here including rainfall. At the present time, Ayr is isolated as far as air and road are concerned. The mighty Burdekin River is in flood and the fish are all learning to swim. So I'll have to depend on the Queensland Railway to get these notes away.

The Bundaberg Radio Club have had their Annual Meeting and the following were elected to office for the ensuing 12 months: President, Les 4XJ; Vice-President, Eric Gardner; Sec./Treas., Bill Sebbens; Publicity Officer, Al McGraw; Asst. Publicity Officer, Les Downing; and A.O.C.P. Instructor, Eric Gardner.

Eric has had outstanding success as an instructor and at the last exam, the following were successful with the Limited ticket: Roy Spotswood, Les Downing, Jim Hazzard, Bill Sebbens and Arch Lewis. They should offer some opposition to Vic 4BJ who, at the moment, is the sole inhabitant of 40 mx, and Les 4XJ, who is on most bands. Frank 4UX should be on more or less regularly, as he now has a Type 3. It used to be mine, but it changed hands for some pieces of silver and as Frank is an optometrist, and as I have been having difficulty in finding the various knobs on my rx, not to mention the trouble I could have in finding the place where I get my fortnightly pittance, although somehow I think that instinct guides me there, so as I can put out my shaking hand once a fortnight, now I've lost track of what I was saying. Oh yes, Frank also gave me a pair of spin rimmed hornicles—sporn rimmed spectacles; all right, glasses.

**Wireless Institute of Australia**

**Victorian Division**

**A.O.C.P. CLASS**

commences

**MONDAY, 6th MAY, 1963**

Theory is held on Monday evenings, and Morse and Regulations on Thursday evenings from 8 to 10 p.m.

Persons desirous of being enrolled should communicate with—  
Secretary W.I.A., Victorian Division, P.O. Box 36, East Melbourne (Phone: 41-3535, 10 a.m. to 3 p.m.), or the Class Manager on either of the above evenings.





# HAMADS

Minimum 5/-, for thirty words.

Extra words, 2d. each.

Advertisements under this heading will only be accepted from Institute Members who desire to dispose of equipment which is their own personal property. Copy must be received at P.O. Box 86, East Melbourne, C.S. Vic., by 8th of the month, and remittances should accompany the advertisement. Call signs are now permitted in Hamads. Dealers' advertisements not accepted in this column.

**FOR SALE:** BC348 double conversion to 455 Kc. Sensitive and selective, £36/10/0. Wanted, one Bug Key, will swap brand new 813 or other gear for same. VK3WW, 3 Maxwell St., Lalor, Melb., Vic.

**FOR SALE:** Swan 120 Transceiver, 3 months old in original etraform packing, new condition, owner going overseas. Band switched 14.1 to 14.25 and 14.2 to 14.35 Mc. Can be simply modified for 40 and 80 metre bands. 25 watts radiated a.m. and 250 watts p.e.p. s.s.b. Xtal lattice filter, good stability, world wide DX coverage, mobile or base. Instruction manual. Power supply if required. Price £160 cash. A. G. Swinton, VK2AAK, P.O. Box 1, Kullnura, N.S.W.

**GENUINE Bargains sent by return.** Taylor 47A Valve and Circuit Tester, excellent condition, £20. A.W.A. A.C. Mantel Radio, recent model, £4. Pye A.C. or Battery Portable, £3. Philips A.C. or Battery Portable, £4. 15 H., 175 mA, Choke, £1. Trannies: 385-0-385v. 80 mA, 325-0-325v. 60 mA, 230v. primaries, 12/6 ea. 2 x 10 volt at 10 amp. secondary, 25/-, 6-12 volt 4 amp. Metal Rectifier, 25/-. 1500V, 15/-, 17K Transistor Signal Injector, 25/-. New Tubes: 2 x 815, 2 x 83, 3, 717A, 6AN7, etc. £3 the lot. VKBRE, 10 Craddock Road, Merredin, W.A.

**SELL:** Heavy duty 46 ft. tower complete with head bearing. Top 7 feet 1 1/2" x 3/16" angle, remainder 2 1/2" x 1/2" angle. Triangular base, 12 ft. 3 in. Prop. Pitch Motor and Transformer to suit. Easily shipped. £65 the lot. F. A. Eastick, Alice Springs, N.T.

**SELL:** Red Line 30w. Modulation Transformer, £2. Similar 400v. 150 mA. Power Transformer and Choke £5 included. E. Blackmore, 10a Holloway St., Carnegie, Vic. VK3TG, Phone 58-2679.

**STILL available:** 5,500 Kc. sets of six matched s.b. filter crystals, 3 Guineas. Same mounted and aligned, in shielded plug-in can, 6 Guineas. Also FT241A Crystals between 370 to 435 Kc. and 475 to 530 Kc, 3 Guineas per set. VK-2AVA, Arie Bles, 33 Plateau Road, Springfield, N.S.W.

**WANTED:** Power Transformer, 1,000v. or 1,500v. aside, approx. 250 mA. or up. VK3AVU, C. Lobb, 200 Elgar Road, Box Hill South, Vic. Phone 28-2785.

**WANTED TO BUY:** Gelsolo Model 209-R Receiver in good condition. Particulars to VK3AUS, H. T. Swanton, 16 Karma Avenue, East Malvern, Vic. Phone 211-3716.

♦ CAN YOU ASSIST "A.R."?

and David TMS may have a new venue for the business meetings and we may hold social meetings in private homes. More of this anon. The tx hunt held in the Ulverstone district in March was a huge success. This was due in no small way to the enthusiastic group of Northern Zone people who turned up. Three runs were made, the respective winners were TXL, J. Gelston, and TDK. Another day along similar lines is projected for next summer at Port Sorell.

By the time you read these notes I should be somewhere on the Pacific for two weeks' cruise, so the scribe for next month will be that terrible man, TMX, T3, T2BH.

## NORTHERN ZONE

The Northern Zone has commenced yet another year of activity, with a new complement of officers being elected at the Annual General Meeting held in March.

The principal officers elected were Pres., Den TDK; Sec., Ray T2R; Treas., Peter TPF; and we are looking forward with keen anticipation to another year of interesting activities both technical and social.

Looking back over the President's report for last year, it is clear that the work of our associate members has been successful in passing their L.A.O.C.P. examinations. Ted T2BB and Graham Rant, Bob Grant and Chris Barnard, who were successful in passing their exams. It looks as though the v.h.f. bands will be well populated in the northern zone this year, especially with the new 2 m. bands. Some of the regular oldtimers to the bands, Len TBQ, Col TIL, Den TDK and Peter TPF. Col and Peter have been doing a lot of experimental work over these bands, and a 2 m portable tx/rx, and they are both operating mobile at the moment with very good results. When the 2 m. bands are opened up and a standard design adopted, it is hoped to start tx hunts again on both 2 and 80 mc. This brought forth quite considerable comment last meeting and one member was overheard planning a three element beam for the back of a motor cycle.

The Southern Zone members attended the Field Day run by the North-West boys, and both Den TDK and Joe Gelston were successful in the 2 m. band. The 2 m. band is a very fine place, although Den was rather hesitant to accept David TMS in a town park; David was suitably disguised as a young lady wheeling a pram and the 2 m. band was a very good day's outing from all accounts.

The Tasmanian Division held their Annual General Meeting on the 20th of March, and a very fine job they did too! All credit must go to those who organised this annual gathering as the weather was perfect, the food was excellent, and the evening entertainment was first class. Den TDK, Peter TPF, and Jack TJB still managed to do his usual fine job next morning, running the TWI broadcast!

The necessary arrangements are under way for the Northern Zone to obtain its own call sign and it is hoped shortly to be able to conduct our own regular net, both on v.h.f. and h.f. bands, so keep a sharp look out on the 2 m. band for the next few months. We will stimulate even more interest in Tasmania in the workings of Amateur Radio.

Active among the Zone members, although not spectacular, has been our very steady and probably the most newsworthy item is that Ray T2R at long last has his rig on the air. He has put out a very good report by reports. Rumour has it that he has also worked through to T2AY in Hobart (almost). Mark TCA has been regularly on the air on the 2 m. band mornings for the TWI broadcast and round up. Nice to hear you Max, bolstering the ranks of the Northern Zone. Ted T2B is still standing his c.w. on 20 and 40 m. bands, and he is arriving his way and prove his point that there's plenty to be had on these bands.

Ted T2BB has been doing a lot of work on all reports spends most of his time making oscillators. He only wishes that he could mix like he could oscillate. Den TDK is always to be heard somewhere on the 2 m. band, and he is going to make more noise than ever when his new 2 m and 8 m tx is finished. John T7F has been working on the 2 m. band, and he is doing more active than ever when his new rig is finished.

Just in case some of our members may have missed the broadcasts and bulletins, our new meeting place is 102 Charles St., Launceston, second Friday each month; the rooms are large and we will be pleased to see you. T3, Johnny Fox.

**WANTED Urgently:** A Sub-Editor to compile the DX page for "A.R." Fuller details obtainable from Editor "A.R." or Alan Shawsmith, VK4SS.

VK3 members are reminded that it is now some years since they received a notice that the annual fee is due. If you read your journal you'll find a notice regarding annual fees. Anyway, why wait for the journal—you know that your sub. is due at the end of February. Why not pay it then?

After the election at the March meeting, the following officers of this Division were appointed by Association:

President, P. M. Williams; 1st Vice-Pres., G. M. Taylor; 2nd Vice-Pres., C. Pearson; Sec., P. O'Connor; Treas., D. Cooper; Minute Sec., C. Pearson; Operator of SWL, C. Pearson; Programme Organiser, R. Gurr; Membership Organiser and Associates, R. L. Cotton; Publicity Officer, etc., W. W. Parsons; V.h.f. Rep., G. Wilder; Fed. Councillor, G. M. Taylor; Technical Advisory Committee, SPU, SKX, SEU, SZGY, SZJM.

The latest news from the Brompton Boys' Radio Club (2BA) is that its new tx has been completed and as soon as the new aerial is added it should be in business again. SGU, SHY, SRR and STJ helped Joe SJO with the rig. Len SZJ is also very popular at the club as he modified a b.c. rx for them. Made a nice job of it too. Joe SJO tells me that if any of the local gang could like to help with repairing gear, they'd be very welcome. The club meets on alternate Fridays from 7 to 9 p.m.

Ted SFH is now at his new QTH and is putting off his usual sold signal—c.w. only. He's got more room for aerals now than he ever had before.

That's all for this month. Back to normal next month with Warwick as scribe, T3, 5CA. (Peace once a year—Ye Thankful Ed.)

## TASMANIA

### NORTH WEST ZONE

Well fellows, winter is fast approaching and we'll no doubt provide us with more time indoors to catch up on the numerous projects we put off during the fine weather. Winter also means more tv, viewing by the general populace, so it would seem good insurance to check those harmonic suppressors. Let us hope we don't have the bigoted neighbours Athol has. It's a bit rugged coming t.v. with the rig switched off! Both Associates, Basil and Ray are hard at it on rx, ready for when they get their ticks.

The March meetings have been well attended of late. We now have several new members who attend consistently, and are studying for the A.R. exam. The group of young chaps is a hard core of older members, all of whom pull their weight—all of which is most gratifying.

Our biggest problem at present is money. Numerous unique means of raising it (both legal and illegal) were discussed last meeting, but no final solution agreed upon. We may have to appeal to HQ as it's our constitutional right, if necessary!

Sid T5F got two chickens from them at the annual meeting, which alleviates expenses. Ray

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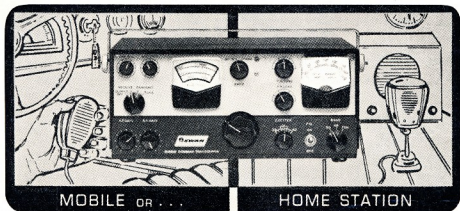
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